Exhibit B

In the Matter Of:

UNITED STATES OF AMERICA v

GOOGLE, LLC

ANTHONY J. FERRANTE

February 16, 2024

LEXITAS™

Case 1:23-cv-00108-LMB-JFA Document 899-2 Filed 07/09/24 Page 3 of 109 PageID# 21138

UNITED STATES OF AMERICA v
GOOGLE, LLC

Highly Confidential

Anthony J. Ferrante
February 16, 2024

1

1   IN THE UNITED STATES DISTRICT COURT

2   FOR THE EASTERN DISTRICT OF VIRGINIA

3   ALEXANDRIA DIVISION

4   CASE NO. 1:23-cv-00108-LMB-JFA

5

6   UNITED STATES OF
     AMERICA, et al.,
7
                    Plaintiffs,
8
              vs.
9

10   GOOGLE, LLC,

11
                    Defendant.
12

13   - HIGHLY CONFIDENTIAL -

14

15   Videotaped deposition of ANTHONY J.

16   FERRANTE, taken pursuant to notice, was held at the

17   offices of Axinn, Veltrop & Harkrider LLP, 114 West

18   47th Street, New York, New York 10036, taken

19   stenographically before MARGARET M. REIHL, RPR, CRR,

20   on Friday, February 16, 2024, commencing at 9:34

21   a.m.

22

23

24   Job No. 92916

25

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Anthony J. Ferrante
February 16, 2024

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 1
 2   I N D E X
 3 WITNESS   PAGE
 4 ANTHONY J. FERRANTE
 5   By Mr. Freeman   ^
 6   - - -
 7   E X H I B I T S
 8 NO.   DESCRIPTION   PAGE
 9
    Ferrante-
10 Lit-1   Expert Report of Anthony
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11
    Ferrante-
12 Lit-2   "10 Cyber Risks and Realities
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13   And Beyond" dated 2/24/23   83
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16 Lit-4   Digiday article, "Unraveling
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17   with user data" 3/20/17   194
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19   As The FBI Took Down Its
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20
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21 Lit-6   Automatic Whitelisting for
            AWBid launched 12/5/13
22   GOOG-AT-MDL-012551468   212
23   - - -
24
25
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22
23  ALSO PRESENT:
24  JONATHAN PERRY, VIDEOGRAPHER
25
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 1           THE VIDEOGRAPHER:  We are now on
 2      the record.  My name is Jonathan Perry.
 3      I am a videographer retained by Lexitas.
 4      This is a video deposition for the U.S.
 5      District Court for the Eastern District
 6      of Virginia, Alexandria Division, Case
 7      Number 1:23-cv-00108-LMB-JFA.  The date
 8      is February 16th, 2024.  The time is
 9      9:34 a.m.
10           We are at the offices of Paul
11      Weiss, 2001 K Street Northwest in
12      Washington, DC.  This deposition is
13      being taken in the matter of the United
14      States of America, et.al., versus
15      Google, LLC.  The name of the deponent
16      is Anthony Ferrante.  All counsel will
17      be noted on the stenographic record.
18      The court reporter is Peg Reihl, also
19      with Lexitas and would you please swear
20      in the witness.
21           ANTHONY FERRANTE, having been
22      duly sworn as a witness, was examined
23      and testified as follows:
24  BY MR. FREEMAN:
25      Q.    Good morning, sir.
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1   A.   Good morning.
2   Q.   We met off the record, but my
3 name is Michael Freeman. I work with the
4 Department of Justice here with my colleague,
5 Julia Wood, also with Department of Justice.
6   I want to start just kind of with
7 deposition ground rules, just so we're all on
8 the same page here. You're sworn under oath,
9 which means you are expected to tell the truth.
10 Anything you say today can be used by the DOJ in
11 any civil, criminal or administrative matter.
12   Do you understand that?
13   A.   Yes, I do.
14   Q.   And so is there anything that
15 occurred today that would prevent you from
16 telling the truth?
17   A.   No.
18   Q.   What I'm trying to get at is
19 there any medication that you're on that may
20 impair your ability to tell the truth or
21 understand why you're here today?
22   A.   Yes, I understand why I'm here,
23 and there's no reason why I cannot tell the
24 truth.
25   Q.   All right. So this deposition is

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1 obviously recorded, and so it's important that
2 we don't talk over each one. So I will let you
3 have full answers. We need to make sure you
4 listen to the complete question and wait until
5 I'm done before you answer.
6   Do you understand that?
7   A.   Yes, I do.
8   Q.   And because there's a court
9 reporter, obviously it's natural -- we'll be
10 here for a few hours -- to potentially nod at
11 times. But it's important to have verbal
12 answers, right, you understand that?
13   A.   Yes, I do.
14   Q.   All right. And if you don't
15 understand a particular question, just please
16 let me know. And so if you don't do that,
17 though, I'll assume you understand the question,
18 okay.
19   Do you understand that?
20   A.   Yes, sir.
21   Q.   All right. At times your
22 attorney may make objections. Unless they
23 instruct you not to answer, then you can still
24 answer the question.
25   Do you understand that?

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1   A.   Yes, I do.
2   Q.   We'll have breaks throughout
3 today. So if you need a break at any point in
4 time, just let us know, and we'll do the best to
5 accommodate that. We do typically like to break
6 every hour or so, okay?
7   A.   Yes, sir.
8   Q.   All right. Do you agree to be
9 bound by these rules today?
10   A.   I do.
11   Q.   All right. So I want to start
12 with just your background, starting back to your
13 education.
14   So where did you go to college,
15 sir?
16   A.   I went to Fordham University in
17 the Bronx, New York.
18   Q.   And did you graduate from Fordham
19 University?
20   A.   I did.
21   Q.   And a degree in what?
22   A.   Computer science.
23   Q.   What years did you attend Fordham
24 University for undergrad?
25   A.   I believe I arrived in 1997 and

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1 graduated in May of 2001.
2   Q.   Did you write any papers while
3 you were in college within the field of computer
4 science specifically?
5   A.   I'm sure I did.
6   Q.   Okay. Were any of those papers
7 on the field of what I'll call "advertising
8 technology"?
9   A.   Is there a particular aspect of
10 advertising technology?
11   Q.   Well, did you write about any
12 aspect of advertising technology?
13   A.   Well, as you can appreciate,
14 advertising technology has an element of
15 security, and so I did a lot of work in
16 undergrad in the security field.
17   Q.   Were any of your papers
18 addressing publisher ad servers?
19   A.   Any of my papers publishing --
20 I'm sorry, can you repeat the question?
21   Q.   Yeah, sure.
22   Any of the papers that you wrote
23 in college, were they on the topic of or
24 incorporated publisher ad servers?
25   A.   They were not.

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1   Q.   Were any of the papers that you
2 wrote on the topic of ad exchanges?
3   A.   From '97 to 2001, no.
4   Q.   Were any of the papers about
5 advertiser ad servers?
6   A.   No.
7   Q.   It's my understanding, then, you
8 went on and got a Master's degree; is that
9 right?
10   A.   Not immediately, but I did.
11   Q.   Okay. So what did you do
12 immediately following graduation from your
13 undergrad from Fordham University?
14   A.   So after I graduated from Fordham
15 University in May of 2001, I continued to work
16 in private practice as a security consultant. I
17 worked at a smaller -- through college to pay
18 for college, I worked at a smaller consultancy
19 firm where I focused on networking, web page
20 development and security.
21   It was in September of 2001 that
22 I started my new job at Ernst & Young as a
23 security consultant. Unfortunately, my first
24 week at work -- or forgive me, the second week
25 of work, the second Tuesday of my first -- my

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1 second week at Ernst & Young was September the
2 11th, which I witnessed the events of 911
3 firsthand in New York City. And as you can
4 appreciate, it absolutely changed my life.
5   So while I did continue to work
6 at Ernst & Young for the next few months, I quit
7 my job to go back to school to get a Master's
8 degree in computer science at Fordham University
9 with the goal of joining the FBI to fight the
10 war on terrorism.
11   It was, I want to say, 2002 is
12 when I went back to school, September of 2002.
13 Or maybe it was September 2003, is when I went
14 back to graduate school.
15   Q.   So the -- if I understood you
16 correctly, you had two different employers
17 between graduating college and going back for
18 your Master's degree?
19   A.   So I worked at a small boutique
20 consultancy firm, really my sophomore year
21 through senior year of college.
22   Q.   What's the name of that
23 particular company?
24   A.   It's changed a few times since.
25 When I started working there, it was called

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1 Array Technology Group. It was a great firm. I
2 think there were maybe 20 people there. I was
3 the college intern. I remember I beat the
4 streets to get the job. I actually walked
5 around with paper resumes. You remember what
6 those look like? And I went to offices and
7 passed them out and got the job.
8   I worked -- I come from a very
9 blue-collar family, so I had to pay for college
10 and I worked -- when I did not have class, I
11 worked at Array Technologies in New York City
12 through my senior year. I worked through
13 school. The summer times, of course, I worked
14 full-time and through my senior year, which I
15 essentially had classes two days a week and
16 worked three days a week.
17   And then when I graduated in May,
18 they kept me on full-time until I started
19 full-time at E&Y -- or Ernst & Young it was
20 called at the time -- which was September 2001.
21   Q.   How long did you work at Ernst &
22 Young?
23   A.   You know, as we were talking
24 earlier, my memory is fuzzy on it. I want to
25 say it was maybe a year, maybe 18 months. It

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1 took -- I know after 911 it was a very surreal
2 world at that point, and so it took time for me
3 to, you know, get prepared for graduate school,
4 get applications in and so -- but I do know I
5 started. It couldn't have been the very next
6 September. It must have been the following
7 September, I believe. I can't recall, to be
8 honest.
9   I do know I graduated in -- from
10 graduate school with a Master's degree in
11 computer science. I graduated, not in May, I
12 had additional courses to take. It was more
13 like August, and it was in August 2004. And it
14 was January 2005, is when I entered on duty to
15 the FBI academy in Quantico, Virginia,
16 January 23rd, 2005.
17   Q.   When you were at Ernst & Young,
18 was any part of your job dealing with
19 advertising technology?
20   A.   So, again, back to -- you asked
21 that question earlier. Advertising technologies
22 have an element of security, and my focus was on
23 the security aspects of internet communications.
24 So, yes, I focused a lot on networking and
25 security of information traversing the internet.

Page 14	**Page 16**

Page 14

1 Q. Was any of your job at Ernst &
2 Young having to deal with publisher ad servers?
3 A. Not that I recall.
4 Q. Was any part of your job at Ernst
5 & Young dealing with ad exchanges?
6 A. Not that I recall.
7 Q. Was any part of your job at Ernst
8 & Young dealing with advertiser ad servers?
9 A. Not that I recall.
10 Q. At your time -- so back when you
11 were at Ernst & Young, did you work with any
12 other advertising tech companies?
13 A. That's a broad question. Can you
14 be more specific?
15 Q. Sure.
16 Did you work with -- let's start
17 with Google in particular -- in the sale of
18 online ads?
19 MS. MAUSER: Object to form. You
20 can answer.
21 THE WITNESS: I don't really
22 recall. I will tell you as a 21,
23 22-year-old young professional, we had
24 some really cool clients, but I don't
25 recall.

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1 processes.
2 Q. So how did you engage or utilize
3 the advertising system processes when you were
4 at Array Technology Group?
5 A. Back then, candidly it was pure
6 programming. It was HTML and JavaScript.
7 Q. When you're talking about search
8 engine optimization, does that also include
9 advertisements that appear in search results?
10 A. No, not in '97, '98. It was --
11 it was about getting the sites that I programmed
12 as high on search results as possible.
13 Q. So I guess I'm a little unclear,
14 then, how search engine optimization is similar
15 to publisher ad servers?
16 A. As I said earlier, it was -- my
17 work was programming the sites, the HTML and the
18 JavaScript, and programming them in a way that
19 search engines would pick them up and place them
20 in their search results. That was the extent of
21 my programming in 1997 and 1998 through 2001.
22 Q. Any of the websites that you
23 worked on during your time at Array Technology
24 Group, were they selling any ads on their web
25 pages?

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1 BY MR. FREEMAN:
2 Q. Then backtracking just a bit, I
3 think you called it -- the company was Array
4 Technologies, could you spell that?
5 A. A-R-R-A-Y Technologies Group,
6 ATG.
7 Q. When you were at Array Technology
8 Group, did you work in the field dealing with
9 publisher ad servers?
10 A. So I did a lot of work doing web
11 programming and publishing, and search engine
12 optimization was a thing then. It was in its
13 very early stages. So I would say the early
14 adoption or the early versions of search engine
15 optimization and ad technologies existed. And,
16 yes, I was involved with multiple clients,
17 programming their websites and leveraging the
18 1998, '99 through 2001 version of advertising
19 technologies.
20 Q. So was search engine
21 optimization, is that the same as a publisher ad
22 server?
23 A. Well, it's -- in order to
24 optimize your search engine results, you would
25 have to engage or utilize the advertising system

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1 A. Candidly, I'm not even sure if
2 that was a thing back then. I believe -- I
3 mean, if I recall correctly, Yahoo was still
4 finding itself. I guess I can admit that
5 sitting in the lunchroom with my colleagues in
6 '98, we were talking about this really cool new
7 search engine called Google, and I remember
8 visiting Google and having it stamped "beta" in
9 the corner. So I'm not even sure if the
10 technologies you speak of, you're asking me
11 about, even existed then.
12 Q. So do you recall any of the
13 websites that you worked on at your time at
14 Array Technology Group selling ads on their
15 particular website?
16 A. I do not recall selling ads. I
17 recall programming sites in a way that would
18 allow them to land higher in search results.
19 Q. Okay. So you went back to, I
20 think you said, Fordham University for your
21 Master's degree?
22 A. I did.
23 Q. And what was your Master's degree
24 in?
25 A. Computer science.

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 1        Q.    Similar question to your
 2 undergrad, did you write any papers as part of
 3 your graduate program just in the general field
 4 of computer science?
 5        A.    I'm sure I did.
 6        Q.    Okay.  Were any of those papers
 7 that you wrote as part of your Master's program
 8 dealing with publisher ad servers?
 9        A.    I do not recall.
10        Q.    Were any of the papers you wrote
11 in your -- seeking your Master's degree about ad
12 exchanges?
13        A.    I do not recall.
14        Q.    Were any of your papers that you
15 wrote as part of your graduate degree part of
16 advertiser ad servers?
17        A.    Do not recall.
18        Q.    Were any of your graduate papers
19 on the topic of header bidding spelling
20 spelling?
21        A.    No.
22        Q.    So I think you said you -- I
23 think in your words was -- we were talking about
24 Quantico, right, in January, 2005?
25        A.    Correct, the FBI Academy in
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 1 Quantico, Virginia, January 23rd, 2005.
 2        Q.    After you finished the academy --
 3 FBI Academy in Quantico, where were you
 4 assigned?
 5        A.    So I graduated in May of 2005,
 6 and they sent me right back to New York City.
 7        Q.    So --
 8        A.    Forgive me.  Sorry.  Where I
 9 processed out of.  I processed out of New York.
10        Q.    You were part of the New York
11 field office?
12        A.    Correct.
13        Q.    Were you assigned to any
14 particular unit?
15        A.    Yes, I was assigned to the
16 national security cyber squad.
17        Q.    What were your duties as you were
18 a special agent at this time?
19        A.    Correct, I was a special agent
20 focusing on counter terrorism, counter
21 intelligence, matters all with a cyber nexus
22 spelling spelling.
23        Q.    I think I've heard you describe
24 this time as you were hunting down terrorists;
25 is that a fair and accurate representation?
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 1        A.    Sure.  I'm sure I've said that
 2 before, and that was a lot of the work that I
 3 did.  It was actually one of the first cases I
 4 worked, was a terrorism matter.
 5        Q.    During your time as a special
 6 agent in the New York field office, how many
 7 cases were filed in criminal court where you
 8 were the primary case agent?
 9        A.    Not many.
10        Q.    More than ten?
11        A.    I don't even recall.  Definitely
12 not many.  I was a national security cyber
13 agent, so I worked a lot of counter intelligence
14 and terrorist matters, so filing them in
15 criminal court was a rarity.
16              As a matter of fact, I remember a
17 case I worked when I did work criminal cyber
18 matters, and I met the prosecutor in Southern to
19 swear out a warrant.  And she asked me to meet
20 her at a certain place, and I said, you know,
21 I'm not familiar with the courthouse, so it
22 wasn't many.
23        Q.    Was there more than five?
24        A.    I don't recall.
25        Q.    Do you recall definitely that
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 1 there was at least one?
 2        A.    I honestly don't recall.  I was
 3 the case agent on hundreds of cases.  Whether or
 4 not that case was a criminal case that was sworn
 5 in the court, like I said, there were not many.
 6 But there were many national security cases,
 7 terrorism, counter intel, and there were indeed
 8 criminal cases that I was a lead case agent on
 9 but never any that went to court.
10        Q.    Why did the criminal cases that
11 you were the lead case agent on never go to
12 court?
13        A.    I mean, there's a myriad of
14 reasons why that can happen.
15        Q.    What are some of them?
16        A.    Leads go cold.
17        Q.    During your time as part of the
18 New York field office, how many times did you
19 testify in court as a special agent?
20        A.    I can't recall.  Very few.
21        Q.    Do you recall definitely at
22 least testifying at least once in court as a
23 special agent?
24        A.    I honestly don't recall.  I know
25 that, you know, I worked -- I certainly worked
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1   cases, like I said, terrorism, counter intel and
2   criminal matters. But sitting in open court and
3   testifying in the witness stand, I can't recall.
4   Q.   During this time as part of the
5   New York field office, how many cases did you
6   investigate involving subjects or targets using
7   or misusing publisher ad servers?
8   A.   In my time in the New York field
9   office after arriving in 2005, we certainly saw
10 a spike in the exploitation of the advertising
11 ecosystem. So the leveraging of the advertising
12 ecosystem as a vector in which to target users
13 was certainly on the rise. It was something we
14 saw every single day, so it's hard for me to put
15 a number on how many cases I worked. But I can
16 say there were many cases that involved the
17 leveraging of the ecosystem as a vector to
18 target users.
19   Q.   I want to break down, I guess,
20 the advertising ecosystem as you phrased it.
21   How many cases involved subjects
22 or targets misusing publisher ad servers?
23   A.   So let's break down your
24 question. How many cases involving subjects or
25 targets? That's a tough question because we

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1   don't always know the subject or target, okay,
2   but what we do know is what happened, which is
3   in some cases the exploitation of the
4   advertising ecosystem in which a -- for example,
5   a drive-by download was leveraged, a spoof
6   domain was leveraged. And therefore, because
7   those elements of the advertising ecosystem were
8   exploited, users were affected, so I knew many
9   victims. But who was behind it was the hard
10 part.
11   Q.   If you didn't know the identity
12 of a subject or target, how would you open that
13 case in the FBI?
14   A.   Well, the FBI has standards.
15 They had the -- I believe they call it DIOG, and
16 I mean, that's the whole point of the
17 investigation if you know who did it. You have
18 to -- it's not as fun if you know who did it.
19 You have to conduct an investigation.
20   Q.   So how many cases did you open as
21 a special agent that involved bad actors using
22 or misusing publisher ad servers?
23   A.   I couldn't put a number on it. I
24 couldn't put a number on it. I would just go
25 back to my statement earlier that from when I

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1   arrived in 2005 through my time in the New York
2   City field office, it was most certainly a
3   vector that was being exploited, similar to that
4   of spam e-mail and phishing e-mail.
5   Q.   While you might not know the
6   precise number, was it more than a hundred?
7   A.   I don't know.
8   Q.   Was it definitively more than 50?
9   A.   So I will tell you -- because I
10 can appreciate you wanting to have an answer
11 here, so I will tell you that these
12 investigations are complicated. They are not as
13 simple as we see this person has exploited the
14 advertising ecosystem and has targeted this
15 entity or these groups of users. What we see is
16 we see the victimization of end users, and that
17 is what generates or initiates an investigation.
18   I can tell you that I ran, led,
19 contributed to hundreds if not thousands of
20 investigations, and they were not always clear
21 what had happened, how it happened, who did it,
22 how they did it, that's the point of the
23 investigation.
24   And so when you ask me to put a
25 number on it, I don't know if we're really doing

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1   justice to the fact that that's what -- that's
2   why we do investigations, is to understand that.
3   If I knew the answer and could tell you right
4   now, I'd be a really -- I'd be a really smart
5   person and, right, have a crystal ball in which
6   I can see these things. That's what we did
7   every day in the FBI, is investigate these
8   matters. They're complicated matters. It was a
9   new vector, a new risk that was introduced to
10 the industry on the internet, much so like as I
11 said earlier, spam or phishing e-mails.
12   I remember my first -- some of my
13 first meetings with significant clear defense
14 contractors where I sat them down and spoke to
15 them about the risks of phishing e-mails and how
16 they're being targeted to senior executives and
17 educating them on that. Just like I remember
18 sitting down with organizations, talking to them
19 about how advertisements can be exploited and
20 drive-by downloads can happen and spoof domains
21 can occur for the facilitation of these criminal
22 activities.
23   But, again, it wasn't always
24 clear as day when it started and throughout the
25 course of the investigation.

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1   Q.   Do you remember any specific case
2 or investigation that you worked on while you
3 were in New York City field office involving,
4 I'll use your words, the advertising ecosystem?
5   A.   I think there's one referenced in
6 my report.
7   Q.   And which one is that?
8   A.   I forget the name of it. If you
9 have my report, I'm happy to reference it to
10 you. But I do remember it involved ad fraud,
11 and I know we arrested some Estonians
12 responsible for it.
13   Q.   Were you the lead case agent on
14 that particular case?
15   A.   No.
16   Q.   You were the -- a co-case agent
17 on that case?
18   A.   Can you be more clear with the
19 term "co"?
20   Q.   I'm sorry.are you familiar with
21 the phrase co-case agent?
22   A.   Of course I am. I just want to
23 make sure we're using it in the same context.
24   Q.   Okay. How would you define
25 "co-case agent"?

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1   A.   So in the FBI there's a lead case
2 agent. And for larger cases, that lead case
3 agent would partner with a colleague, and they
4 would be co-case agent. The bigger the case,
5 the more co-case agents.
6   Q.   So using that definition, were
7 you a co-case agent in that particular case
8 where you arrested Estonians?
9   A.   In that particular case, I was
10 not.
11   Q.   In that particular case, were you
12 the affiant on any particular warrants related
13 to that case?
14   A.   I don't think so.
15   Q.   Did you sit at counsel's table
16 for any court proceedings related to that
17 investigation?
18   A.   I did not.
19   Q.   In that case, did the FBI use
20 assistance from private sector partners?
21   A.   I can't specifically recall, but
22 I want to say yes. I mean, many times in these
23 technical cases the FBI partnered with private
24 industry.
25   Q.   Do you remember the FBI

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1 partnering with Georgia Tech University?
2   A.   I don't recall -- oh, I'm sorry,
3 let's back up. In general or on this case?
4   Q.   On this particular case?
5   A.   I don't recall.
6   Q.   I take it by that answer you
7 remember the FBI working with Georgia Tech
8 University on other cases?
9   A.   And to the more general question,
10 I don't recall.
11   Q.   Do you recall a professor at
12 Georgia Tech University by the name of Wenke
13 Lee -- and I'll spell that: W-E-N-K-E, then
14 last name Lee, L-E-E?
15   A.   Do I recall Professor Lee outside
16 of these proceedings? I do not.
17   Q.   So do you know whether he
18 assisted in that case that resulted in the
19 Estonians being arrested?
20   A.   I don't know.
21   Q.   Why would the FBI use the
22 assistance of private sector partners to
23 investigate a case?
24   A.   I think it's very common and well
25 known talking point from the government, from

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1 the Department of Justice, from the FBI, from
2 the Department of Homeland Security. Majority
3 of the internet infrastructure is privately
4 owned, and we're stronger together, so
5 partnerships are critical in proactive and
6 responsive cyber threats -- combating cyber
7 threats.
8   Q.   So while you weren't case agent
9 or affiant on any warrant, so what was your role
10 in that case involving the arrest of six
11 Estonians?
12   A.   I supported my colleagues.
13   Q.   What does that mean?
14   A.   I mean in a case like that is a
15 very large case, lots of data to process.
16 Excuse me. Lots of technologies to understand
17 and unpack. I was one of the more technical
18 members of our group, and so I was regularly --
19 I was regularly consulted for guidance. I was
20 also at that point a more seasoned agent.
21   Q.   What does that mean?
22   A.   It means I was more experienced
23 than the younger folks, and so I would help
24 them.
25   Q.   Did you review any data for that

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1 particular case?
2   A.   Gosh, I don't recall, but I feel
3 like it was a all-hands-on-deck effort, so I'm
4 not sure how I couldn't have, but I don't recall
5 specifically.
6   Q.   For that particular case, are you
7 aware whether the FBI reached out to Google to
8 seek their assistance?
9   A.   It's my understanding that the
10 government did reach out to Google.
11   Q.   For that particular
12 investigation?
13   A.   Yes.
14   Q.   And what was Google's response?
15   A.   To be clear, again, because I was
16 not the case agent or the co-case agent, I'm not
17 sure who initiated that conversation, whether
18 Google reached out to the government or the
19 government reached out to Google. But I do know
20 that Google was involved in the -- that
21 operation.
22   Q.   Being part of the FBI, are you
23 aware that sometimes the Department of Justice
24 do press releases in regards to big arrests?
25   A.   Yes.

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1   Q.   Are you aware, for this
2 particular case, whether there was any press
3 release by the Department of Justice?
4   A.   I think there was.
5   Q.   As part of being a special agent,
6 have you ever been asked to contribute to the
7 substance of any press release?
8   A.   Yes.
9   Q.   As part of that are you asked
10 what other outside institutions deserve credit
11 for that particular investigation?
12   A.   You know, I can't speak directly
13 to that. The times that I was consulted, that
14 was not a question that was asked.
15   Q.   Have you read press releases by
16 the Department of Justice about large arrests?
17   A.   I'm sure I have.
18   Q.   Is it common in those press
19 releases, then, for the Department of Justice to
20 acknowledge the assistance of outside entities
21 that helped in the investigation?
22   A.   I'm sorry, can you repeat the
23 question?
24   Q.   Sure.
25   Is it common in press releases

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1 that are released by the Department of Justice
2 to acknowledge outside entities that helped in
3 the investigation?
4   A.   You know, I'm not sure if I can
5 answer that. I didn't work in the press shop.
6 You say is it common, are you asking that
7 question in the context of today, or are you
8 asking in the context of that investigation that
9 we were speaking about earlier?
10   I can tell you from my
11 experiences in the FBI it's a very sensitive
12 topic, and I don't know if there is a clear
13 answer there.
14   Q.   Have you ever read Department of
15 Justice press releases that acknowledges outside
16 entities in their help of the investigation?
17   A.   I'm sure I have.
18   Q.   Did you read the press release
19 for this particular case that you're citing the
20 arrest of the six Estonians?
21   A.   I'm sure I have. I think I
22 reference it in my report.
23   Q.   Is Google referenced as one of
24 the outside entities that helped the FBI in that
25 particular investigation?

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1   A.   I can't recall. If you want to
2 pass me my report, we can look at it.
3   Q.   Do you remember Georgia Tech
4 University being one of the outside entities
5 that were acknowledged for assisting in that
6 investigation?
7   A.   As I sit here right now without
8 the press release in front of me, I can't
9 recall.
10   Q.   You cite another case in your
11 report that you referenced as the FBI
12 Minneapolis Division instituted case.
13   Are you familiar with what I'm
14 talking about?
15   A.   I recall referencing it in my
16 report.
17   Q.   Did you have any personal
18 involvement in that particular case?
19   A.   I don't think so.
20   Q.   Did any of the conduct that
21 occurred in that particular case occur on any
22 Google platform?
23   A.   I -- I can't answer that as I sit
24 here right here. Can you show me my report?
25 Can we discuss it? Can we walk through it?

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1	Q.	Sure.
2	A.	Can you be more specific?
3	Q.	Sure.
4		MR. FREEMAN: We'll mark this as

Ferrante Lit Exhibit 1.

6   (Document marked for

7   identification as Ferrante-Lit

8   Deposition Exhibit No. 1.)

9 BY MR. FREEMAN:

10   Q.   So for identification what's been

11 now marked as Ferrante-Lit Exhibit Number 1 is

12 your report that you made in preparation for

13 this case; is that right?

14   A.   Correct.

15   Q.   So the case that I was talking

16 about occurs on paragraph 18 on page 9.

17   Do you see that?

18   A.   I do see that.

19   Q.   Okay. So my question was in

20 relationship to this case that you talked about

21 in paragraph 18, did any of this conduct that

22 you described occur on any Google platform?

23   A.   You know, I'm not sure.

24   Q.   How did you gain information or

25 knowledge about this particular case?

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1   A.   It's cited at the bottom,

2 footnote 14.

3   Q.   Just so we're clear, when you

4 talk about footnote 14, that's the press

5 release, right?

6   A.   Correct.

7   Q.   Did you have any independent

8 knowledge of this particular case outside of the

9 press release?

10   A.   Not that I recall.

11   Q.   Then going back just two

12 paragraphs to paragraph 16 on page 8, you

13 reference "the self proclaimed King of Fraud."

14   Do you see that?

15   A.   I do see that term, "King of

16 Fraud."

17   Q.   And you're referencing a

18 particular criminal prosecution of a Russian

19 national; is that correct?

20   A.   Correct.

21   Q.   Did you have any personal

22 involvement in that particular investigation?

23   A.   No. I was not in the New York

24 City field office at that time.

25   Q.   How did you gather information

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1 and knowledge about that particular case?

2   A.   Research.

3   Q.   Did you research anything beyond

4 the press release that is cited in footnote 11?

5   A.   Beyond the press release?

6   Q.   Yeah.

7   A.   Yeah, of course.

8   Q.   Okay. What did you investigate

9 beyond the press release cited in footnote 11?

10   A.   Any sort of open source reporting

11 on the operation. I mean, a couple of them are

12 cited.

13   Q.   What other sources of information

14 beyond the press release did you rely on to get

15 information about this particular investigation?

16   A.   As I said, open source reporting.

17   Q.   My question is: what open source

18 reporting did you review and rely on to gain

19 knowledge about this particular case?

20   MS. MAUSER: Object to form.

21   THE WITNESS: Well, I mean,

22   footnote 10, footnote 11, footnote 12,

23   for example, are three -- three

24   examples, are three citations that are

25   in my report to talk about the point

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1   that I'm trying to make here, which is

2   organized crime members gravitate

3   towards ad fraud because the risk to

4   reward ratio, risk to reward ratio.

5 BY MR. FREEMAN:

6   Q.   Did you review any other open

7 source information about this particular case

8 other than those noted in footnotes 10, 11 and

9 12?

10   A.   I'm sure I did.

11   Q.   Okay. What other ones did you

12 review?

13   A.   I'm not sure. I mean, I'm sure I

14 went to the internet and did as much research as

15 possible as I try to verify my information like

16 any investigator would do. And so I looked at

17 various sources and have highlighted, like I

18 said, three of them here to cite my points in

19 the expert report.

20   Q.   You have an appendix to your

21 report, Appendix B starting on page 41; is that

22 right?

23   A.   I see page 41, Appendix B,

24 "Materials Referenced and Relied On."

25   Q.   What is encompassed within

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1 Appendix B?

2   A.   This is a list of material that I

3 referenced and relied on in order to draw the

4 conclusions in my report.

5   Q.   So those open source -- open

6 sources that you used to gain information about

7 this particular investigation of the King of

8 Fraud, are those listed in Appendix B?

9   A.   I cited my --

10   MS. MAUSER: Object to form. You

11   can answer.

12   THE WITNESS: Okay. I've

13   cited -- what I speak about in paragraph

14   16, I cite with these footnotes.

15 BY MR. FREEMAN:

16   Q.   But you testified that you

17 reviewed other open sources about this

18 particular case to gain knowledge about it,

19 right?

20   A.   Of course.

21   Q.   So my question is: those other

22 sources that are not in footnotes 10, 11 and 12,

23 are those listed in Appendix B?

24   A.   So I think I need to just

25 explain.

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1   I work in the security industry.

2 I wake up at 5:00 a.m., and I go to sleep 10:00

3 or 11:00 p.m. That's all I do every day, is

4 read about security, security threats, security

5 risks, how to mitigate those risks and examples

6 of how others have done it. So when you talk

7 about me citing every single source that I have

8 read, it's just impossible. I'm a security

9 expert who started doing what I do at ten years

10 old, and I have done nothing since I was ten

11 years old. And that's all I do; it is my

12 profession.

13   And so what I've done here is

14 written my expert report. And the points that I

15 make in my expert report, I have cited in my

16 footnotes. Not everything I read I relied on,

17 but I have read a lot of information. I'm sure

18 you can appreciate that.

19   Q.   But my question is: what sources

20 of information did you review in order to

21 include this particular case in paragraph 16?

22   A.   And I believe I've answered that

23 by saying the footnotes that I've referenced in

24 the report.

25   Q.   But then in addition to those

Page 40

1 three, there are other open sources that you

2 reviewed to gain information about this

3 particular investigation?

4   A.   Correct. But like I said

5 earlier, as noted in Appendix B, materials that

6 I've referenced and relied on are listed.

7   And, Michael, if I may, we're

8 coming up on the hour. And at your convenience,

9 can we take a wellness break?

10   Q.   Sure. Let me have just maybe

11 three more questions, and then we'll do it just

12 to conclude on that particular paragraph.

13   A.   Sure.

14   Q.   So any of the conduct in this

15 particular case about the King of Fraud, did

16 that conduct occur on any Google platform?

17   A.   For Methbot?

18   Q.   Correct.

19   A.   As I sit here right now, I can't

20 answer that. Can we look at my references?

21   Q.   You mean Appendix B?

22   A.   No, meaning footnote 12, "Methbot

23 then and now."

24   Q.   I'm just asking you as you sit

25 here today, do you recall whether Methbot had

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1 any -- occurred on any Google platform?

2   A.   And as I answered, as I sit here

3 from memory, I can't recall. But I would be

4 interested in reading footnote 12, but I

5 understand this is -- you're asking the

6 questions, not me.

7   MR. FREEMAN: We can take a

8   break.

9   THE WITNESS: Want to take a

10   break?

11   MR. FREEMAN: I thought you

12   requested a break.

13   THE WITNESS: Earlier. But I

14   said at your convenience. You ready?

15   MR. FREEMAN: We can take a break

16   now.

17   THE WITNESS: Okay.

18   THE VIDEOGRAPHER: Off the record

19   10:22. This ends media unit number one.

20   (Brief recess.)

21   THE VIDEOGRAPHER: On the record

22   at 10:34. This begins media unit two in

23   the deposition of Anthony Ferrante.

24 BY MR. FREEMAN:

25   Q.   Did you have any other positions

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1 within the FBI other than being a special agent
2 in the New York field office?
3   A.   Yes.
4   Q.   I want to talk about your next
5 position within the FBI going oldest to most
6 recent.
7   So after you were a special agent
8 in the New York field office, what was your next
9 position within the FBI?
10   A.   So when I was in the New York
11 City field office, again, I got there in May of
12 2005. I want to say it was sometime in 2006 or
13 2007 I joined where -- rather I was selected to
14 be a member of the FBI's Cyber Action Team,
15 which is essentially a rapid deployment team
16 within the FBI focused on significant cyber
17 events. So I was a member of that team.
18   A few years later I was a member,
19 noncertified member of the Crisis Negotiation
20 Team. And then right around that period of
21 time, I became a certified special agent bomb
22 technician.
23   Q.   And just so I'm clear, I think
24 you listed three different positions within the
25 FBI that you had all at the same time as being a

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1 special agent in the New York field office?
2   A.   So I was a member of the cyber
3 action team, yes, through my time in New York,
4 whenever I got on that. I believe it was 2006
5 through -- actually through my time at
6 headquarters, and then I forget what year, but I
7 did become a member of the crisis negotiation
8 team.
9   I stepped down from the crisis
10 negotiation team when I joined the special agent
11 and bomb technician program. I served on that
12 team, and I forget when but I became a certified
13 special agent bomb technician maybe in 2009.
14 And I served as a bomb technician through the
15 remainder of my time in New York City.
16   Q.   Did you work on any case as part
17 of the cyber action team relating to bad actors
18 misusing publisher ad servers?
19   A.   Not that I recall. Not as a
20 member of the cyber action team.
21   Q.   Did you work on any case as part
22 of the cyber action team relating to bad actors
23 misusing ad exchanges?
24   MR. FREEMAN: Can we go off just
25   for 30 seconds?

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1   MS. MAUSER: Something keeps
2   beeping.
3   THE VIDEOGRAPHER: (Pause.) Off
4   the record at 10:47.
5   THE VIDEOGRAPHER: On the record
6   at 10:39.
7 BY MR. FREEMAN:
8   Q.   Okay. I'm going to reask my
9 question right before we took that break.
10   A.   Sure.
11   Q.   Did you work on any case as part
12 of the cyber action team relating to bad actors
13 misusing ad exchanges?
14   A.   Not that I recall, not as a
15 member of the cyber action team.
16   Q.   Did you work on any case as part
17 of the cyber action team related to bad actors
18 misusing advertiser ad servers?
19   A.   As a member of the cyber action
20 team in that capacity, not that I recall.
21   Q.   And then am I correct that your
22 roles as a crisis negotiator or bomb tech didn't
23 relate to publisher ad servers?
24   A.   It did not.
25   Q.   Or ad exchanges?

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1   A.   It did not.
2   Q.   Or advertiser ad servers?
3   A.   It did not.
4   Q.   Okay. So eventually you leave
5 New York City, right?
6   A.   I did.
7   Q.   But then you're still part of the
8 FBI, right?
9   A.   Correct.
10   Q.   Okay. So what's your next
11 position with the FBI after you leave New York
12 City?
13   A.   So in 2013, I believe it was
14 July 2013, I promoted down to FBI headquarters
15 where I started as a supervisory special agent
16 at this point, and I started as a congressional
17 liaison in the cyber division working in the
18 front office. I was in that post, I want to
19 say, weeks, maybe a few months until I started
20 serving as the de facto chief of staff and
21 principal advisor to the assistant director in
22 charge of the cyber division.
23   Q.   I want to go back then when you
24 were a supervisor special agent and
25 congressional liaison in that timeframe.

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1   So were you supervising any
2   special agents during that timeframe?
3   A.   It's a good question. I did not
4   have a squad, but I certainly oversaw programs
5   and folks on our front office staff.
6   Q.   What type of programs did you
7   oversee during this particular timeframe?
8   A.   Well, at that time -- I mean when
9   I first got there it was -- I was responsible
10   for the congressional affairs portfolio. So my
11   duties involved me being intimately involved
12   with all of our matters, criminal and national
13   security and ensuring that we were doing
14   everything we could to advertise our good
15   work -- not advertise -- to make sure Capitol
16   Hill was aware of our good work. And so that
17   happened through various methods, whether they
18   were verbal briefings to various committees,
19   paper notifications, one to one meetings.
20   I worked very closely with the
21   FBI's office of congressional affairs and DOJ's
22   office of congressional affairs, but DOJ had a
23   different name for it, I forget it.
24   Q.   Okay. If I caught all that,
25   during this timeframe you gave verbal briefings

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1   to members of Congress; is that what you're
2   talking about?
3   A.   Correct.
4   Q.   And then similarly with -- you
5   said paper notifications that were paper
6   notifications to members of Congress?
7   A.   Yeah, they called them
8   congressional notifications. They went up to
9   the Hill. Whether or not anyone read them, I
10   don't know.
11   Q.   Then you said you had, at times,
12   one-on-one meetings, is that with members of
13   Congress?
14   A.   Or staff, yeah, representatives
15   or staff.
16   Q.   Do you recall giving any verbal
17   briefings to members of Congress or their staff
18   about bad actors misusing publisher ad servers?
19   A.   I can't recall.
20   Q.   What about verbal briefings to
21   members of Congress or their staff about bad
22   actors misusing ad exchanges?
23   A.   I mean, the question as you ask
24   it, I'm not sure. I mean, even the previous
25   question. I want to go back to what I said

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1   earlier that it's a very broad topic. And as I
2   said before, the advertising ecosystem, we saw
3   an uptick in it being used as a vector to which
4   consumers were being targeted.
5   And so did we give briefings to
6   members of Congress about domain spoofing, and
7   malvertising and drive-by downloads? Of course.
8   I mean, that was what we did in the cyber
9   division, was investigator those matters.
10   Whether or not we stood before members of
11   Congress and attributed it to the advertising
12   ecosystem, I can't answer that as I sit here in
13   this chair. But the threats that existed on --
14   in that ecosystem, that's all we briefed them
15   on.
16   Q.   What type of products do you
17   include when you say the phrase "advertising
18   ecosystem"?
19   A.   Well, when I use that phrase, I
20   am referring to from -- I mean, in this
21   particular instance, a consumer sitting at their
22   computer. And when I say "consumer," let me be
23   more specific and just say a general US citizen
24   sitting at their computer, browsing the internet
25   and visiting various websites.

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1   When I talk about security risks,
2   I talk -- I'm referring to that US citizen
3   sitting at that computer, using that web
4   browser, browsing to different internet sites
5   and being targeted through advertisements,
6   drive-by downloads, spoof domains, scareware and
7   others. That was a new vector that we saw in
8   the government from my time in New York through
9   my time at headquarters.
10   Q.   Do you include publisher ad
11   servers as part of the advertising ecosystem?
12   A.   The larger ecosystem when
13   speaking about advertising?
14   Q.   I'm going back to how you used
15   the phrase. You used the phrase multiple times
16   today, "advertising ecosystem," right?
17   A.   Yes.
18   Q.   What I'm trying to get at is when
19   you use the phrase, "advertising ecosystem," are
20   you including publisher ad servers as part of
21   that ecosystem?
22   A.   Sure.
23   Q.   Are you including ad exchanges as
24   part of that ecosystem?
25   A.   Yes.

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1   Q.   Are you including advertiser ad
2 servers as part of that ecosystem?
3   A.   I'm sorry, can you repeat that?
4   Q.   Yeah.
5   Are you including advertiser add
6 servers as part of that ecosystem?
7   A.   Advertiser ad servers, yes.
8   Q.   Is it possible for domain
9 spoofing to occur outside of the advertising
10 ecosystem?
11   A.   Of course.
12   Q.   Is it possible for drive-by
13 downloads to occur outside the advertising
14 ecosystem?
15   A.   That's a complicated question.
16 Can you be more specific?
17   Q.   Have you ever seen drive-by
18 downloads occur outside of publisher ad servers,
19 the ad exchange or advertiser ad servers?
20   A.   So then in your hypothetical, we
21 have a web browser? Do we have a web browser?
22   Q.   I'm asking not in hypothetical
23 terms.
24   A.   Okay.
25   Q.   Did you see, as a member of the

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1 FBI, drive-by downloads occur outside the
2 publisher ad servers, the ad exchange or the
3 advertiser ad servers markets?
4   MS. MAUSER: Object to form.
5   THE WITNESS: I think that's a
6   complicated question.
7   A drive-by download can exist
8   just sitting on a web page. It has
9   nothing to do with the advertising.
10   Yes, I've seen that happen before.
11 BY MR. FREEMAN:
12   Q.   So I want to go back to: did you
13 give any verbal briefings to members of Congress
14 or their staff about bad actors misusing ad
15 exchanges?
16   A.   Specifically ad exchanges, I do
17 not recall. Specifically noting and using the
18 term "ad exchanges" or even the "advertising
19 ecosystem," I do not recall.
20   I can tell you that the risks
21 that we saw that were being delivered, the pay
22 loads, the vectors being delivered to consumers,
23 to these US citizens is what we briefed because
24 that's what we did every day.
25   Q.   That included risk outside of the

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1 advertising ecosystem, right?
2   A.   Yes. And to be clear, I don't --
3 as you ask these questions, I don't -- yes.
4   Q.   Did you author any congressional
5 notifications about bad actors misusing
6 publisher ad servers?
7   A.   I can't recall.
8   Q.   Did you author any congressional
9 notifications about bad actors misusing ad
10 exchanges?
11   A.   I can't recall. I have to
12 imagine they may be public. I can tell you it
13 wasn't uncommon to issue a notification or
14 briefing on a bot net. I can tell you
15 specifically we did extensive work in the bot
16 net -- in the bot net domain, in the bot net
17 space.
18   So as I sit here and I say I
19 can't recall, I'm happy to go back and check
20 because I'm sure some of that work was
21 associated with advertising -- the advertising
22 ecosystem. I just can't recall right now.
23   Q.   Did you ever testify in court
24 while being a supervisory special agent with
25 also being the congressional liaison?

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1   A.   No.
2   Q.   Did you ever testify in front of
3 Congress when you were in that particular
4 position?
5   A.   No.
6   Q.   When you were in that position,
7 did congressional members or their staff make
8 inquiries or requests to you?
9   A.   Yes.
10   Q.   Do you recall any specific
11 request from a member of Congress or their staff
12 about the advertising ecosystem?
13   A.   Specifically the advertising
14 ecosystem?
15   Q.   Yes.
16   A.   That term, "advertising"?
17   Q.   Let's start there, yes.
18   A.   The answer is no.
19   Q.   Do you recall any specific
20 request from a member of Congress or their staff
21 about publisher ad servers?
22   A.   Those exact terms?
23   Q.   Yes.
24   A.   No.
25   Q.   Do you recall any specific

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 1   request from a member of Congress or their staff
 2   about ad exchanges?
 3        A.     Again, those specific terms?
 4        Q.     That's correct.
 5        A.     I cannot recall.
 6        Q.     Do you recall any specific
 7   request from a member of Congress or their staff
 8   about advertiser ad networks?
 9        A.     Those specific words, no, I
10   cannot recall.
11        Q.     So I think, then, you said the
12   next position within the FBI, you were still a
13   supervising special agent but also the chief of
14   staff; is that right?
15        A.     That is correct.
16        Q.     You were the chief of staff to
17   who?
18        A.     To the assistant director of the
19   cyber division, Joseph Demarest.
20        Q.     When did you have that particular
21   position?
22        A.     Officially, I can't recall.  As I
23   said, I got there in July of 2013.  I served in
24   that congressional liaison post for a few
25   months.  Unofficially, I became essentially the
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 1   acting chief of staff.  I don't recall when I
 2   was officially named, but I eventually was named
 3   the 15 and the full bird chief of staff for the
 4   cyber division spelling spelling.
 5        Q.     When you say you were eventually
 6   named -- did you say 15 like the number?
 7        A.     GS15.
 8        Q.     Yeah, meaning like the pay scale?
 9        A.     Correct.  I was a 14 as a
10   supervisory special agent.
11        Q.     During the time that you were
12   chief of staff, did you supervise other FBI
13   special agents?
14        A.     Yes.
15        Q.     Did you have a squad?
16        A.     Yes.
17        Q.     How many members were on your
18   squad?
19        A.     That's a good question.  I don't
20   recall.  Twelve, 15, ten.  It ebbed and flowed.
21   It was essentially the front-office operations.
22        Q.     Other than supervising other
23   special agents, did you have any other role as
24   chief of staff?
25        A.     I was the principal advisor to
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 1   the assistant director overseeing the
 2   administratively and operationally everything
 3   that was going on in the division.  There were
 4   five -- four or five sections, section chiefs.
 5   Within those sections, unit chiefs.
 6             I mean, I was the conductor that
 7   kept all the trains running on time.
 8        Q.     Would you author any memos, then,
 9   to the assistant director of -- in the cyber
10   division?
11        A.     That's a good question.  If I
12   could have avoided it, I would have.  I'm sure I
13   authored memos to divisional staff, to the
14   field.  But I also oversaw my colleagues
15   authoring them and pushing them out.
16        Q.     Do you recall authoring any memo
17   during this timeframe about the advertising
18   ecosystem?
19        A.     Me personally authoring?
20        Q.     Yeah.
21        A.     No, I did not author.
22        Q.     During this time how many cases
23   did you supervise where targets or subjects were
24   misusing the advertising ecosystem?
25        A.     You know, that's an excellent
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 1   question.  And as I sit here right now, I can't
 2   answer it.  I can tell you there were cases.
 3        Q.     Do you recall the specifics of
 4   any of those cases?
 5        A.     No.
 6        Q.     Did they result in criminal
 7   prosecutions?
 8        A.     I can't recall as I sit here
 9   right now.
10        Q.     Were any of these cases that you
11   supervised during this timeframe involved
12   subjects or targets misusing header bidding
13   wrappers?
14        A.     Yeah, I mean, at that point in
15   time from that perspective, again, as I worked
16   in that role with the assistant director.  As I
17   said earlier, we saw more and more of those
18   security risks being exploited or used -- excuse
19   me -- as a vector to target US citizens.
20             And of course through the course
21   of our investigation, we wanted to know how it
22   was happening.  And so we saw more and more of
23   our work taking us to the advertising ecosystem.
24             So was I involved in case
25   briefings, case updates, trade craft, knowledge
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1 shares, attribution? Yeah, I was involved in
2 all of that.
3   Q.   How many cases did you supervise
4 that involved bad actors using header bidding
5 wrappers?
6   A.   So I think we should maybe level
7 set. And when you say the term "supervise," now
8 we're not talking about the case agent or
9 co-case agent, correct?
10   Q.   If I understand you correctly,
11 during this timeframe you didn't have any
12 independent cases in which you were the case
13 agent; is that correct?
14   A.   That is correct.
15   Q.   Okay.
16   A.   At headquarters I did not serve
17 as a case agent or a co-case agent on any case.
18   Q.   So my question when we talk about
19 supervisors, my understanding you had your own
20 squad, right?
21   A.   I had a squad.
22   Q.   And just so we're clear with
23 everyone who is not in this world, "squad" means
24 other special agents?
25   A.   Other special agents and

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1 professional staff, yes.
2   Q.   And you said that's roughly --
3 you had roughly -- it ebbed and flowed but with
4 roughly ten special agents?
5   A.   Yeah, ten to 12.
6   Q.   When I talk about supervise, I'm
7 talking about supervising special agents who
8 were the case agent on cases involving bad
9 actors misusing header bidding wrappers?
10   A.   So that's where I think, you
11 know, we just have to unpack it together as we
12 step through it. As the chief of staff, my
13 responsibility was to oversee operationally,
14 administratively all cases in the FBI cyber
15 division so --
16   Q.   Let me stop you there just so
17 we're clear.
18   Including those not investigated
19 by members of your squad?
20   A.   My squad?
21   Q.   Yeah.
22   A.   The front-office squad? None of
23 them were doing any investigations. At the FBI
24 all investigations are done at the field level,
25 from the field office. There are no cases run

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1 out of headquarters except for very, very
2 special ones.
3   All cases are run out of the
4 field. The field is program managed, various
5 topics from headquarters, so the field takes
6 their cases, and they report them up to their
7 program manager. And at that time, we had
8 rolled out a new way of conducting
9 investigations where we had strategic offices
10 and tactical offices. And so there was some --
11 there were field offices working specific cases
12 that would then report into headquarters.
13   Now, that reporting into
14 headquarters is where it fell on my desk, and
15 that choreographing and understanding of the
16 cases and making sure everybody was coordinated
17 and everybody knew what was going on, not only
18 within the field offices, other field offices
19 within head quarters; making sure that our other
20 government agencies were briefed on these
21 various cases and make sure the Hill was aware
22 of what was going on, make sure the brass within
23 the Hoover Building was aware of these cases.
24 So that was my responsibility when I say I
25 oversaw.

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1   I think you're referring to the
2 term "supervising" in the traditional sense,
3 meaning like a subordinate and boss. As the
4 chief of staff that was most certainly not my
5 role. It was way more than that.
6   Q.   So the ten or so special agents
7 on your squad, they were not independently doing
8 investigations?
9   A.   They were not.
10   Q.   Do you recall any specific
11 investigation or case involving the misuse of
12 header bidding wrappers?
13   A.   I'm sorry, can you repeat the
14 question?
15   Q.   Yeah.
16   I think you previously testified
17 that you did recall investigations of subjects
18 or targets misusing header bidding wrappers; is
19 that right?
20   A.   That is correct.
21   Q.   So my question is: do you recall
22 specific ones that involved actors, subjects or
23 targets misusing header bidding wrappers?
24   A.   So when you say do I recall
25 specific ones, you have to be more specific. I

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1 remember cases involving header wrappers. I
2 recall many cases involving header wrappers.
3 Who was under investigation, how it occurred is
4 a different story. Where it occurred, that
5 is -- that is where I think we just need to
6 unpack and step through.
7   Q.   Sure.
8   Do you recall what specific field
9 offices were investigating subjects or targets
10 misusing header bidding wrappers?
11   A.   I do not.
12   Q.   Do you recall the name of any
13 individual who was a subject or target of an
14 investigation involving the misuse of header
15 bidding wrappers?
16   A.   I do not. You have to appreciate
17 from the FBI cyber division headquarters perch,
18 I mean, there are thousands of cases. So
19 knowing the name of the actual individual, the
20 target, it just wasn't something that I would
21 do.
22   Q.   Do you recall the name of an
23 entity that was a subject or target involving
24 the misuse of header bidding wrappers?
25   A.   I mean, not as I sit here right

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1 now.
2   Q.   During this timeframe as being
3 chief of staff, did you ever testify in court?
4   A.   No, I thought we answered that
5 one.
6   Q.   Did you ever testify in front of
7 Congress --
8   A.   I did not.
9   Q.   -- in that role?
10   Did you testify in any other type
11 of proceeding that would not be criminal court
12 or Congress?
13   A.   And I assume your -- when you say
14 "testify," you are speaking the traditional
15 sense, raise-your-right-hand testimony?
16   Q.   That's correct?
17   A.   Then, no, not that I recall. I
18 will say that I regularly walked the Hill with
19 my boss and gave briefings to members and their
20 staff.
21   Q.   Did you have any other positions
22 within the FBI that we haven't talked about?
23   A.   I became -- I took a joint duty
24 assignment and moved over to the National
25 Security Council in the Whitehouse in 2015,

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1 October of 2015.
2   Q.   How long did you have that role?
3   A.   I think it was just under two
4 years. I served for the last 18 months in the
5 Obama administration, and then a few months of
6 the Trump administration. As an FBI employee I
7 was apolitical, so I went back to work at the
8 Whitehouse on January 21st, 2017, worked for a
9 few months there on the National Security
10 Council. I served as the director for cyber
11 incident response and the cyber directorate.
12   Q.   Did you conduct any
13 investigations while you had this joint duty
14 assignment?
15   A.   No, I had to give up my
16 investigative work.
17   Q.   Were you supervising other
18 individuals, other special agents within the FBI
19 during this time?
20   A.   No.
21   Q.   Did you ever testify in court
22 when you held this position or this joint duty
23 assignment?
24   A.   I did not.
25   Q.   Did you ever testify in front of

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1 Congress when you had this position?
2   A.   I did not.
3   Q.   Did you ever testify in any other
4 proceeding, other than court or Congress, when
5 you had this -- when you had this position?
6   A.   Again, when you say "testify,"
7 we're just going to assume that it is the
8 traditional sense raising your right hand and
9 giving testimony, correct?
10   Q.   That's correct.
11   A.   Yeah, no, I did not.
12   Q.   So during your time as an FBI --
13 I'm saying from the time you reported to
14 Quantico to the time you left the FBI, did you
15 ever testify in Federal Court?
16   A.   I can't recall.
17   Q.   Did you ever testify in State
18 Court?
19   A.   I can't recall.
20   Q.   So after you left the National
21 Security Council, what did you do next in your
22 career?
23   A.   So in April of 2017 I resigned
24 from government service and went into private
25 practice the same month.

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1   Q.   Who was your employer when you
2 left government service in April of 2017?
3   A.   Who did I leave government
4 service for?
5   Q.   Yeah, when you left, who did you
6 work for?
7   A.   When I left, I worked for the
8 U.S. government. My next post was in private
9 practice where I started working at FTI
10 Consulting, my current employer.
11   Q.   And you've been continuously
12 employed by FTI Consulting from April of 2017 to
13 present?
14   A.   Correct.
15   Q.   Since you've been with FTI
16 Consulting, consultants, how many times have you
17 testified in court?
18   A.   I can't recall. I can tell you
19 that the public or the unsealed cases are listed
20 in my CV.
21   Q.   Are you suggesting that there are
22 cases that you testified in that are under seal?
23   A.   In court?
24   Q.   Yeah. My question was: how many
25 times have you testified in court?

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1   A.   Yeah, I can't recall. I can tell
2 you -- again, I'm not an attorney, so I'm not
3 sure -- I don't pretend to know how that works.
4 But the cases that I am allowed to disclose are
5 written in my CV. If you want to walk through
6 them, I can tell you which ones ended up in
7 court and which ones didn't.
8   Q.   So how many times have you
9 testified under oath in court?
10   A.   In a courtroom, right? Because
11 we're under oath today, but we're not in a
12 courtroom.
13   Q.   In a courtroom?
14   A.   Okay. Let's look. So there are
15 two expert retentions Proofpoint, the via day
16 secure spelling spelling and then CDK Global,
17 those were in a courtroom.
18   And I can tell you that using the
19 traditional sense of being under oath, I
20 testified up on the Hill a couple years ago for
21 one of the committees. I forget which one.
22   Q.   Let's go back, then, to that
23 before we get to your retention as an FTI
24 consultant.
25   What was the subject matter of

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1 your testimony on the Hill a couple of years
2 ago?
3   A.   I forget exactly. I want to say
4 maybe it was the adoption of 5G and the
5 associated risks. It should be listed.
6   Q.   Okay. So now I want to talk
7 about the two cases that you just cited where
8 you testified in court. Let's start with the
9 Proofpoint, Incorporated case.
10   Did a court certify you as an
11 expert witness in that particular case?
12   A.   They did.
13   Q.   And what was the field of
14 expertise in which they certified you in?
15   A.   Reasonable measures as a cyber
16 security expert. The exact language I know is
17 on the record.
18   Q.   What were you asked to opine
19 about in that particular case?
20   A.   The reasonable measures that
21 Proofpoint took to protect their intellectual
22 property.
23   Q.   What type of intellectual
24 property did they have?
25   A.   Source code, documents.

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1   Q.   Does Proofpoint Incorporate --
2 Incorporated operate in the advertising
3 ecosystem?
4   A.   I'm not sure I can answer that
5 when you say "they operate." I'm sure they do
6 advertisings.
7   Q.   Was part of -- was part of your
8 testimony discussing Proofpoint's intellectual
9 property as it relates to any product they have
10 in the advertising ecosystem?
11   A.   Again, can you reask the
12 question, and can we step through it?
13   Q.   Well, the source code -- let's
14 start there. You said you testified about
15 source code.
16   A.   Source code and documents.
17   Q.   Okay. Let's talk about just the
18 source code for a moment.
19   A.   Okay.
20   Q.   Was it source code relating to
21 the advertising ecosystem?
22   A.   I can't say for certain as I sit
23 here right now, but I will -- I will say I do
24 not think so.
25   Q.   And then similar question about

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1 the documents as you indicated.
2   Were the documents that you
3 reference as intellectual property of Proofpoint
4 related to the advertising ecosystem?
5   A.   Again, as I sit here right now, I
6 can't say definitively, but I know it was a lot
7 of material.
8   Q.   Okay. Then the second one in
9 which you've testified, right, is just the
10 letters C-D-K Global, right, you see that?
11   A.   Correct.
12   Q.   Did the court in that particular
13 case certify you as an expert witness?
14   A.   They did.
15   Q.   In what field?
16   A.   The security field. The exact
17 language I don't know, but I know there's a
18 transcript.
19   Q.   "Security field," meaning cyber
20 security field?
21   A.   Cyber security.
22   Q.   What were you asked to opine
23 about?
24   A.   Sensitive data and the risks of
25 that sensitive data and how passing that

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1 sensitive data without controls is very
2 dangerous and puts consumers, specifically US
3 consumers at risk, while in this case, Arizona
4 consumers.
5   Q.   Were you retained by CDK Global?
6   A.   I was, yes, correct.
7   Q.   And how was CDK Global passing
8 sensitive data?
9   A.   They weren't. They were fighting
10 the -- I believe Brnovich was maybe the
11 governor.
12   Q.   Let's just spell it for the court
13 reporter?
14   A.   Sure, you want to spell it?
15   Q.   Sure B-R-N-O-V-I-C-H; is that
16 correct?
17   A.   Yes.
18   Q.   All right. How was Brnovich
19 passing sensitive data?
20   A.   Yeah, I think you pronounced it
21 correctly.
22   Brnovich was pro passing
23 sensitive consumer -- Arizona consumer data to
24 third parties. He wanted to make it freely
25 available and to share it with third parties

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1 while CDK Global did not want to do that because
2 it introduced a ton of risks to consumers.
3   Q.   How was Brnovich collecting
4 sensitive data?
5   A.   He wasn't. I believe he was
6 either the governor or secretary of state; he
7 had an official political position within the
8 state. He wasn't collecting it. The car
9 dealerships in his states were.
10   Q.   How were the car dealerships
11 within the state of Arizona collecting sensitive
12 data?
13   A.   Well, I learned a lot in this
14 case. Believe it or not, from the moment you
15 visit a car dealer's website through visiting a
16 showroom to test driving a vehicle, to
17 purchasing a vehicle, dealerships collect a lot
18 of data on consumers. And they harvest that
19 data, and they were looking to share it freely
20 and without controls. And CDK -- CDK Global did
21 not want that to occur because of the various
22 risks that created.
23   Q.   Was any part of that case in your
24 testimony related to the advertising ecosystem?
25   A.   Yes.

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1   Q.   What part of the case was
2 involving the advertising ecosystem?
3   A.   Like I just said, through my work
4 on that case I studied and learned how these car
5 dealerships were collecting data and then using
6 that data to target consumers for the purposes
7 of sales.
8   Q.   But how did that relate to the
9 advertising ecosystem?
10   A.   Well, I learned about a lot of
11 the data that these dealerships were collecting
12 and how they were collecting it and where they
13 were collecting it.
14   Q.   Were these car dealerships using
15 publisher ad servers to collect this data?
16   A.   My -- the scope of my work there
17 was not to unpack that aspect of it, rather just
18 the data that they were collecting and how they
19 were collecting it.
20   Q.   Is there any other time that
21 you've testified in court as an expert?
22   A.   Not that I can recall.
23   Q.   In Appendix A of your report --
24 starts on page 36 --
25   A.   Okay.

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1   Q.   -- there's a list of articles
2 under the title, quote, "Recent publications,"
3 end quote.
4   Do you see that?
5   A.   Yes, sir, I do.
6   Q.   Is that a comprehensive list of
7 all the publications that you've authored in
8 whole or in part in the previous ten years?
9   A.   That -- I understand that is a
10 requirement, and we work very hard to keep this
11 updated.
12   Q.   So the answer to that is yes?
13   A.   To the best of my knowledge, yes.
14   Q.   Were any of these publications
15 that you authored in whole or in part peer
16 reviewed before publication?
17   A.   Yeah, I'm sure. I mean, part of
18 our process is we peer review all of our work.
19   Q.   Were any of them blind peer
20 reviewed?
21   A.   No.
22   Q.   Which articles in Appendix A were
23 peer reviewed before publication?
24   A.   Again, I have to say -- I mean,
25 all of them should have been. It's part of our

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1 practice on the team.
2   Q.   Peer reviewed by who?
3   A.   Members of our team.
4   Q.   Within FTI Consulting?
5   A.   Within FTI Consulting, yes. In
6 the first and most instances, yes. In some
7 instances, I may take it outside to an academic
8 or a colleague in the legal industry for peer
9 review or co-authorship.
10   Q.   Which article listed in these
11 recent publications did you take to an outside
12 academic?
13   A.   I couldn't answer that right now.
14 I'd have to go through them all. I'm happy to
15 do that.
16   Q.   Which one of these recent
17 publications was peer reviewed by someone
18 outside of FTI Consulting?
19   A.   Let me look. I mean, I'm not
20 really sure as I sit here. I can tell you some
21 of these pieces I would have most certainly
22 reached out to colleagues in the industry but
23 some I wouldn't have. So I don't know as I sit
24 here and look at the titles.
25   Q.   What percentage of the

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1 publications listed in this appendix were peer
2 reviewed by someone outside of FTI Consulting?
3   A.   Say maybe ten, 20%.
4   Q.   But you can't point to one
5 specific one that was peer reviewed by someone
6 outside of FTI Consulting?
7   A.   I mean, I want to say maybe the
8 Hill piece, "US Presidential Election is Under
9 Attack."
10   Q.   Who was that peer reviewed by?
11   A.   I don't know specific names.
12 But, I mean, that's what I do every day, and
13 most of my friends are security people. And
14 maybe they don't work for FTI, but they work
15 either in the government or in the security
16 industry or in the security industry for the
17 government.
18   So, you know, I'm not really
19 secretive about my publications. I enjoy
20 writing and publishing. So if I have an
21 interesting piece in something like that, I
22 might have said -- sent it to someone and said
23 what do you think, am I crazy?
24   Q.   Were any of these publications
25 published in journals that require the pieces to

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1 be peer reviewed before publication?
2   A.   So I can't answer that. I would
3 have to send you to our team that actually
4 facilitates that whole process. I don't know.
5   Q.   You don't know whether any of
6 your publications were published in journals
7 that require peer review before publication?
8   A.   What I said was I don't know if
9 any of the journals I published in require peer
10 review. I wouldn't be the person to ask that.
11 I write the piece, pass it to the team who then
12 gets it published.
13   Q.   What journals have you published
14 in?
15   A.   Everything is listed here. You
16 say "journal," I'm thinking in the traditional
17 sense like an academic journal or something. I
18 don't know if I've really event been published
19 in a journal. Like I said, everything is here.
20   Q.   Have you ever been published in
21 an academic journal?
22   A.   I don't know as I sit here. I
23 would have to go through all of these.
24   Q.   As you sit here today, do you
25 recall being published in an academic journal?

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1   A.   Again, I don't know. I've been
2 writing for -- in this topic in the security
3 industry for -- I mean, since I was 18. But in
4 the last ten years, I don't know if any of these
5 are academic journals. Here you go; New York
6 Law Journal, holistic view, Insurance Journal.
7 So those are two just based on the title.
8   Q.   Is the New York Law Journal an
9 academic publication?
10   A.   I don't know. I was making that
11 just based on New York Law Journal.
12   Q.   So is it fair to say you don't
13 remember any academic publications that you
14 authored as you sit here today; is that fair?
15   A.   I'm sorry, can you repeat the
16 question?
17   Q.   Is it fair to say you don't
18 remember any specific academic publications that
19 you authored as you sit here today?
20   A.   I just said, you know, based on
21 looking at these titles, I can't answer that
22 question right now. I'd have to go through each
23 of them. I mean, the New York Law Journal, I
24 read that as New York Law School, maybe you read
25 it as New York State or New York City. Again, I

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1 don't know. If we pull the piece, we can look
2 at it and get clarification. I'm just not sure.
3   Q.   So that's a long way of saying
4 you don't know of any academic publications that
5 you've had as you sit here today?
6   A.   Yeah.
7   Q.   Of these publications that you've
8 had, how many have been about malvertising?
9 Just for spelling M-A-L-V-E-R-T-I-S-I-N-G; is
10 that right?
11   A.   Oh, I'm sorry.
12   Q.   Malvertising, I'm just making
13 sure we're spelling it correctly.
14   A.   Yeah, I'm sure you can spell it
15 for the court reporter.
16   You asked me a question about how
17 many were focused on malvertising. I'd have to
18 go through them to answer your question and then
19 to answer your question clearly.
20   Q.   So, again, as you sit here today
21 do you recall authoring any publication
22 discussing malvertising?
23   A.   I mean, of the 31 pieces, as I
24 sit here today, I can't say the substance of
25 them outside -- outside their titles, but I'm

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1 sure malvertising has been referenced.
2   Q.   And which ones are you sure that
3 they've been referenced?
4   A.   I don't know. I'd have to look
5 at them.
6   Q.   How are you sure that they've
7 been referenced?
8   A.   I mean, malvertising is a risk.
9 It's been on the rise. It's -- it's been a risk
10 to users over the years.
11   Q.   So is it your testimony today
12 that the word "malvertising" appears in at least
13 one of the publications listed?
14   A.   No, that's not my testimony, that
15 the word "malvertising" exists in one of these.
16   What I'm saying is malvertising
17 is a threat; it's a risk. And in my recent
18 publications, the 31 recent publications in the
19 last ten years, I don't know what I've written
20 in those. Is the concept of malvertising
21 referenced either directly or indirectly? I'm
22 saying it's very possible, but I don't know.
23   Q.   How many of these publications
24 discuss header bidding?
25   A.   I don't know.

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1   Q.   Have you ever published personal
2 research results from studies that you've
3 conducted in this field?
4   A.   Personal?
5   Q.   Yeah.
6   A.   I don't know of -- anything I've
7 published I have done -- I mean, personal and
8 professional lives I feel like are so blurred
9 these days. So anything I publish I've done
10 either professionally or academically. And I
11 don't believe I was published as an academic but
12 conducted plenty of research.
13   Q.   What type of research have you
14 conducted?
15   A.   Period?
16   Q.   I'm sorry?
17   A.   Is that your entire question?
18   Q.   You said you conducted plenty of
19 research, rye?
20   A.   I mean, that's all I do is
21 research. I told you started in this industry
22 when I was ten years old. I'm cognizant that
23 I'm talking to the Department of Justice. At
24 ten years old I was hacking computers,
25 ethically, of course. I continued -- I wrote my

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1 first program at ten. I hacked my first program
2 at ten. That's research. Business BASIC was
3 the language I learned at ten years old, which
4 then I then studied as an academic; HTML,
5 JavaScript, Java, Perl, PHP. These are all
6 computer languages that I researched, studied,
7 wrote, compiled, decompiled, engineered, reverse
8 engineered, networks that I've built. I mean,
9 that's all I've done since the age of ten is
10 research.
11   So then did I take that research
12 and publish on it? No, not as an official
13 academic. Professionally, sure. I've taken
14 research that I've done and written papers, all
15 of which should be outlined here.
16   Q.   The first publication listed
17 under this title is one titled "10 Cyber Risks
18 and Realities We're Seeing This Year - And
19 Beyond."
20   Do you see that?
21   A.   I do see that.
22   Q.   And then you even have the date
23 of February of 2023; is that right?
24   A.   Yes.
25   Q.   So about a year ago?

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1   A.   Correct.
2   Q.   Did you list malvertising as one
3 of the top ten cyber risks and realities of this
4 year and beyond?
5   A.   I can't recall.
6   MR. FREEMAN: We'll mark this as
7   Ferrante litigation Exhibit 2.
8   (Document marked for
9   identification as Ferrante-Lit
10   Deposition Exhibit No. 2.)
11 BY MR. FREEMAN:
12   Q.   So just for identification, is
13 this the article that you published that's
14 referenced in Appendix A of your report here?
15   A.   Yes.
16   Q.   Let me know when you've had time
17 to review it.
18   A.   (Witness reviews document.)
19   Okay.
20   Q.   Do you list malvertising as one
21 of the top ten cyber security risks and
22 realities of this year and beyond?
23   A.   Based on the titles alone, no.
24   Q.   Do you make any meaningful
25 distinction between malvertising and ad fraud?

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1   A.   In this article?
2   Q.   No, just generally in your field?
3   A.   Oh, meaningful distinction
4 between malvertising and ad fraud?
5   Q.   Correct.
6   A.   Yeah, of course.
7   Q.   What's the difference between?
8   A.   Ad fraud is the exploitation of
9 the advertising process, while malvertising is
10 using the ad ecosystem to target end users and
11 try to exploit end users or devices.
12   Q.   Do you list ad fraud as one of
13 the top ten cyber risk and realities of this
14 year and beyond?
15   A.   I do not. Hold on, actually
16 pause. I'd like to look at this more closely.
17   (Witness reviews document.)
18   So there are two references in
19 here that you can attribute to the uptick in
20 exploitation of the advertising ecosystem.
21   Q.   Okay, which two are those?
22   A.   The first one is "The government
23 mandated orders examining cyber securities are
24 increasing"; and then the second one is "Third
25 party reliance will cause multiple data

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1 breaches."
2   Q.   But you don't directly reference
3 ad fraud in this article?
4   A.   It's a journal piece. I mean, I
5 talk about the risks. I could write a book on
6 each of these based on the work we're doing. So
7 I think it's important when you're writing,
8 what, may be a four or five-page piece to keep
9 it interesting to talk about it at a high level.
10 But those are two particular points that we see
11 more and more at work every day, and the
12 advertising ecosystem is absolutely involved.
13   Q.   But you don't address the
14 advertising ecosystem explicitly in that
15 article, do you?
16   A.   We don't use the words
17 "advertising ecosystem," but we talk about
18 third-party risk, and we talk about the
19 government -- my term "government hammer" --
20 that is being dropped on organizations that are
21 not protecting user data.
22   Q.   Those also -- those risks occur
23 outside of the advertising ecosystem as well,
24 right?
25   A.   Of course they occur outside the

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1 advertising ecosystem. But in this particular
2 paper, I'm talking about it specific to the work
3 that we are doing currently at FTI Consulting
4 relating to the advertising ecosystem.
5   MR. FREEMAN: We've been going
6   about an hour. This is a logical break.
7   MS. MAUSER: Fine by me.
8   MR. FREEMAN: We can go off the
9   record.
10   THE VIDEOGRAPHER: Off the record
11   11:38. This ends media unit number two.
12   (Brief recess.)
13   THE VIDEOGRAPHER: On the record
14   at 11:55. This begins media unit three
15   in the deposition of Anthony Ferrante.
16 BY MR. FREEMAN:
17   Q.   Just one point of clarification
18 or question of clarification. We've been
19 talking about advertising ecosystems. When
20 you're using that phrase, you're talking about
21 the online or digital advertising ecosystem,
22 right?
23   MS. MAUSER: Object to form.
24   THE WITNESS: Correct. That's
25   what this case is about, correct.

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1 BY MR. FREEMAN:
2   Q.   I understand. I just want a
3 point of -- we're not talking about advertising
4 in print newspaper --
5   A.   No, I'm sorry.
6   Q.   -- or magazines or anything like
7 that?
8   A.   No. Correct, online digital.
9   Q.   So then moving -- excuse me -- to
10 this particular case, Google retained you for
11 this case?
12   A.   Google did, yes.
13   Q.   Had you ever been retained by
14 Google prior to this case?
15   A.   Yes.
16   Q.   How many times have you been
17 retained by Google prior to this case?
18   A.   I believe the answer to that,
19 prior to this case, is three times.
20   Q.   What were the subject matters
21 that you were retained prior to this case?
22   A.   Yes. Prior to this case, the
23 three retentions, as you can appreciate, two of
24 them are confidential. They involve the need
25 for outside independent experts to support

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1 Google. In the third instance, while it started
2 as a confidential matter, is now public. But
3 that matter involves us, FTI Consulting,
4 supporting Google in the takedown -- or the
5 identification and the takedown of a bot net.
6   Q.   What was your role in the taking
7 down of the bot net?
8   A.   So I am the global practice
9 leader, so I have insights into all the cases we
10 work around the globe. And so my role in that
11 case was ensuring quality control, the right
12 team was working on it, making sure that we were
13 doing our part.
14   Q.   The two matters that you said
15 were confidential, were they in relation to or
16 involved litigation?
17   A.   I don't know. Can you be more
18 clear when you say "litigation"? One of them
19 was -- so I think not.
20   Q.   Were you still working on any of
21 those matters when you were retained in this
22 particular case?
23   A.   The three of them that we spoke
24 about?
25   Q.   That's correct.

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1   A.   I mean, it's possible those
2 matters were still open. I don't know if we
3 were actively billing or conducting any type of
4 work.
5   Q.   I don't want the substance, but
6 who contacted you to be retained in this
7 particular case?
8   A.   In this particular matter?
9   Q.   Yeah.
10   A.   The gentleman's name is William
11 Isaacson.
12   Q.   Is it true, then, your hourly
13 rate for this particular case is $1,350 per
14 hour?
15   A.   I believe that is correct. It's
16 stated in my report.
17   Q.   How many hours have you worked on
18 this case to date?
19   A.   You know, I'm not sure. Couldn't
20 really say.
21   Q.   Well, is it more than a hundred
22 hours?
23   A.   I'm not really sure. I can tell
24 you that since retention I met regularly with my
25 team. I meet weekly, if not more than once a

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1 week. I know the team engaged with counsel
2 pretty regularly. So, I mean, if you go back to
3 our original retention to present date and the
4 tallying of the hours, I'm sure it's hundreds of
5 hours.
6   Q.   Had you worked with Mr. Isaacson
7 on the other matters prior to this case?
8   A.   No.
9   Q.   Have you been paid at all by
10 Google to date?
11   A.   Paid?
12   Q.   Yeah.
13   A.   That's a really good question.
14 On this matter?
15   Q.   Correct.
16   A.   I don't know.
17   Q.   When were you retained for this
18 particular matter?
19   A.   I don't recall the exact date,
20 but I want to say it was this summer; June, July
21 of 2023.
22   Q.   So in preparing -- you ultimately
23 wrote a report in this case, right?
24   A.   That is correct.
25   Q.   In preparing for this -- for that

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1 report that you authored, how many internal
2 Google documents did you personally review?
3   A.   I mean, they're definitely cited
4 in the report. But everything cited I reviewed.
5   Q.   Understood.
6   My question is: did you review
7 any other internal Google documents that are not
8 cited in the report?
9   A.   I can't recall.
10   Q.   Did you review any type of source
11 code?
12   A.   Source code?
13   Q.   Yeah.
14   A.   Yes.
15   Q.   What source code did you review
16 in preparation for your report?
17   A.   Well, as part of our
18 investigation as a technical expert, I mean
19 that's what we do every day in these
20 investigations, is we'll read and then do field
21 testing. And so as part of our investigation
22 here, there was source code involved,
23 particularly JavaScript, and then server calls.
24   Q.   Where did you review that source
25 code?

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1   A.   In the lab.
2   Q.   At FTI Consulting?
3   A.   Correct.
4   Q.   You still have the report in
5 front of you?
6   A.   I do.
7   Q.   Going back to Appendix B, on page
8 41, this is the appendix of "Materials
9 Referenced and Relied On," correct?
10   A.   Correct.
11   Q.   Do you cite any source code as
12 materials referenced or relied on for your
13 report?
14   A.   I'm not sure. I don't know if we
15 would have listed the actual source code or cite
16 the source code. When I say that when I looked
17 at the source code, it's part of our field
18 testing. It's what we do every day. In our
19 work every investigation we do because we are
20 technical experts.
21   We very much like to, you know,
22 to use the term "peek under the hood" or "peek
23 behind the curtain" to actually see the guts of
24 what's happening because there's reading it in
25 an article, and then there's seeing it. And

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1 when it comes to looking at the TCIP
2 connections, the server calls, the JavaScript,
3 the HTML code, it's important to actually see it
4 so you can understand how it's working. So I
5 don't know if we would have listed it, but I
6 know we would have done it.
7   Q.   Did your review of the source
8 code for this particular case help you form your
9 opinions in the report?
10   A.   It verified our opinions.
11   Q.   What type of things did the
12 source code verify?
13   A.   The existence of certain
14 configurations, how things were written, where,
15 examples, right, looking at the source code of
16 CNN.com versus the New York Times.com. It's
17 insightful.
18   Q.   Did you look at any of the source
19 code that's proprietary to Google?
20   A.   Oh, no. We looked at only open
21 source, what's available on the public internet.
22   Q.   Did you ask to see any source
23 code that was proprietary to Google?
24   A.   No.
25   Q.   Did you review any datasets as

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 1   part of your preparation for this report?
 2        A.      You have to be a little bit more
 3   clear.
 4        Q.      Well, in Appendix B, that you
 5   referenced, of materials referenced and relied
 6   on, are there any things that you would specify
 7   as datasets that you relied on?
 8        A.      Well, Appendix B in totality is a
 9   data set.  I mean, I would almost say a lot of
10   these items could be categorized as datasets.
11   That's why I asked if you could be just more
12   specific.
13        Q.      When we talk about source code,
14   how would you define it?
15        A.      Source code?
16        Q.      Yeah.
17        A.      Actual code, programming
18   languages codes, BASIC, HTML, JavaScript, Perl,
19   PHP, C++, C, Python.
20        Q.      Did you conduct any surveys as
21   part of your preparation for this report?
22        A.      A survey?
23        Q.      Yeah.
24        A.      Survey of whom?
25        Q.      Well, did you interview any
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 1   publishers as part of your preparation for this
 2   report?
 3        A.      No.
 4        Q.      Did you interview any companies
 5   that have publisher ad servers as part of
 6   preparation for your report?
 7        A.      Not that I recall.
 8        Q.      Did you interview any companies
 9   that have ad exchanges as part of preparation
10   for your report?
11        A.      Can you repeat that last
12   question?
13        Q.      Sure.  Well, let's start with
14   this.
15                What companies are you aware of
16   that have ad exchanges?
17        A.      I mean, some of the big players,
18   of course Google, PubMatic.
19        Q.      Do you know of any other
20   companies that have --
21        A.      OpenX, Amazon, Prebid.
22        Q.      What companies are you aware of
23   that have publisher ad servers?
24        A.      Yeah, I can't -- as I sit here
25   right now.
```

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 1        Q.      What companies do you know that
 2   have advertising ad networks?
 3        A.      I mean, I have a list of all of
 4   these.  I'm just trying to bucket them.  So as I
 5   sit here right now -- trying to think.  I mean,
 6   there are lots of players in this space; Adobe,
 7   PubMatic, OpenX.  I think I said that.
 8        Q.      Any others you can think of?
 9        A.      Yeah, I can't -- as I sit here
10   right now, I can't think of them.
11        Q.      What's a demand-side platform?
12        A.      Demand-side platform, that is the
13   function of inventorying the various -- let's
14   call them publishers that demand the actual ad
15   space.
16        Q.      What is an advertising ad
17   network?
18        A.      Ad network is the match maker,
19   the demand for supply, in simple terms.
20        Q.      Does Google have a demand-side
21   platform product?
22        A.      Google has AdX, AdSense, Google
23   Ad Manager.
24        Q.      Are any of those would you
25   classify as demand-side platforms?
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 1        A.      I think so.
 2        Q.      Which ones would you clarify as
 3   demand-side platforms?
 4        A.      The manager.
 5        Q.      Does Google have an advertising
 6   ad network?
 7        A.      Yes.
 8        Q.      What's the name of that?
 9        A.      Google Ad Manager?
10        Q.      Do you know any other companies
11   that have a demand-side platform?
12        A.      Not off the top of my head.
13        Q.      Do you know any other company
14   that have advertising ad network?
15        A.      Advertising ad network?
16        Q.      Yeah.
17        A.      Again, back to the previous
18   question, not off the top of my head.
19        Q.      So back to when I talked about
20   surveys, did you interview anyone who worked for
21   PubMatic in preparation for your report?
22        A.      No.
23        Q.      Did you review any deposition
24   transcripts from someone who worked at PubMatic?
25        A.      Not that I recall.
```

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1   Q.   Did you interview anyone who
2 worked with OpenX in preparation of your report?
3   A.   Not that I recall.
4   Q.   Did you review any deposition
5 transcript of anyone that worked at OpenX in
6 preparation of your report?
7   A.   Not that I recall.
8   Q.   Did you interview anyone who
9 worked with Amazon in preparation for your
10 report?
11   A.   No, not that I recall.
12   Q.   Did you review any deposition
13 transcript of anyone that worked at Amazon in
14 preparation of your report?
15   A.   I'm sorry, could you ask that
16 again?
17   Q.   Sure.
18   Did you review any deposition
19 transcript of anyone that worked at Amazon in
20 preparation of your report?
21   A.   Not that I recall.
22   Q.   Did you interview anyone who
23 worked at Google in preparation of your report?
24   A.   Interview anyone at Google --
25   Q.   Just for clarification, I don't

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1 want any communication with lawyers.
2   A.   Yes, no, I understand that.
3   Q.   Okay.
4   A.   Not that I recall.
5   Q.   Did you interview anyone who was
6 a former Google employee in preparation of your
7 report?
8   A.   No, I did not.
9   Q.   Did you review the deposition
10 transcript of anyone who worked at Google in
11 preparation of your report?
12   A.   Not that I can recall.
13   Q.   Did you review the deposition
14 transcript of any person who formerly worked at
15 Google in preparation of your report?
16   A.   Not that I recall.
17   Q.   Of the Google documents that you
18 did review, did any of them have hyperlinks
19 contained within them?
20   A.   I believe so, yes.
21   Q.   Did you review those hyperlink
22 documents?
23   A.   No, I did not, outside of reading
24 the actual hyperlink itself, I was unable to
25 click on those links.

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1   Q.   How many public Google documents
2 did you personally review in preparation of your
3 report?
4   A.   I mean, I couldn't put a number
5 on it. I know I have a lot cited in my report.
6   Q.   Did you review any other
7 public -- Google public documents that is not
8 cited in your Appendix B?
9   A.   I mean, that's just such a broad
10 question. I want to say I'm sure I did.
11 There's a lot of documents; there are a lot of
12 Google documents out there. And if it wasn't
13 referenced in my report, then I certainly didn't
14 reference it in the report or rely on it.
15   Q.   Of the Google documents that
16 contained hyperlinks, did you ask to get the
17 underlying document that was hyperlinked?
18   A.   If I needed it or if I thought I
19 did, if I thought -- then I wouldn't have been
20 shy to ask. I can't recall as I sit here if I
21 did or did not.
22   MS. MAUSER: I can represent that
23   we did not provide Mr. Ferrante any
24   hyperlink to any document. He only had
25   access to things as they were produced

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1   to you.
2   MR. FREEMAN: Thank you.
3 BY MR. FREEMAN:
4   Q.   Did you review any documents from
5 PubMatic?
6   A.   If it's not listed in my report
7 as referenced or relied upon material then, no.
8   Q.   Did you review any internal
9 documents from OpenX?
10   A.   Internal documents from OpenX?
11   Q.   Yeah.
12   A.   Not that I recall.
13   Q.   Did you review any internal
14 documents from Amazon?
15   A.   No, not that I recall.
16   Q.   Did you review any internal
17 documents from any company other than Google?
18   A.   Okay, can you reask that
19 question, please?
20   Q.   Sure.
21   Did you review any internal
22 documents from any other company other than
23 Google?
24   A.   Okay, so I just want to make sure
25 I understood you correctly.

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1   Internal documents, no.
2   Q.   Did you ask to see internal
3   documents of any other company?
4   A.   No.
5   Q.   Are you familiar -- excuse me.
6   Are you familiar with a company,
7   Criteo, and I'll spell it. C-R-I-T-E-O?
8   A.   Can you give me -- is it
9   referenced in my report?
10   Q.   Not necessarily. I'm just asking
11 if you are familiar with that company being in
12 the field?
13   A.   It sounds familiar and that's why
14 I'm wondering where you read it.
15   Q.   Do you know what type of products
16 or platforms they have in the online advertising
17 ecosystem?
18   A.   Who's "they"?
19   Q.   Criteo?
20   A.   I mean, there are thousands of
21 providers out there. You are going to have to
22 give me a little bit more than that. Is it in
23 my report? Let's start there.
24   Q.   Are you familiar with a company,
25 The Trade Desk?

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1   A.   I've heard of the company, The
2   Trade Desk.
3   Q.   What product or platforms does
4   The Trade Desk offer in the online advertising
5   ecosystem?
6   A.   Again, as I sit here right now, I
7   can't answer that. I'd have to familiarize
8   myself with it.
9   Q.   Are you familiar with a company
10 called Magnite? I'll spell it again.
11 M-A-G-N-I-T-E.
12   A.   I can't recall.
13   Q.   Do you know what products or
14 platforms they offer in the digital advertising
15 ecosystem?
16   A.   With respect to Magnite, no.
17   Q.   Are you familiar with a company
18 by the name Index Exchange?
19   A.   I have heard of Index Exchange.
20   Q.   What product or platforms do they
21 offer in the online advertising ecosystem?
22   A.   As I sit right here, I couldn't
23 say.
24   Q.   Are you familiar with the company
25 Xandr, spelled X-A-N-D-R?

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1   A.   Yes, Xandr, I believe, is -- it's
2   a player in the space, either an exchange or a
3   network.
4   Q.   Do you know what products or
5   platforms they offer in the digital online -- or
6   digital advertising ecosystem?
7   A.   Like I just said, an exchange or
8   a network.
9   Q.   Did you interview any advertisers
10 in preparation of your report?
11   A.   No.
12   Q.   Did you interview any advertising
13 agencies in preparation of your report?
14   A.   No.
15   Q.   How many internal Google
16 documents did you review that discussed header
17 bidding?
18   A.   I can't recall as I sit here. I
19 would say that if I relied on them, they're most
20 certainly referenced in my report.
21   Q.   Did you rely on any other
22 internal -- strike that.
23   Did you review any other internal
24 Google document that is not referenced in
25 Appendix B of your report?

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1   A.   I'm sorry, can you repeat that?
2   Q.   Did you review any other internal
3   Google document that is not referenced in
4   Appendix B of your report?
5   A.   Not that I recall.
6   Q.   How many public Google documents
7   did you review that discussed header bidding?
8   A.   And when you say "Google
9   documents," you mean official Google-stamped
10 publications?
11   Q.   What I mean by that is someone
12 who works for Google is the author of the
13 particular report or article?
14   A.   And it would sit on the Google
15 domain, or it's just a Google professional
16 publishing on header bidding?
17   Q.   The former, meaning how many
18 public Google documents did you review that were
19 on an owned and operated Google website?
20   A.   Yeah, so thank you for that
21 clarification.
22   As I sit here, I cannot
23 definitively say.
24   Q.   Was it more than 100?
25   A.   No.

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1   Q.   Was it more than 50?
2   A.   No.
3   Q.   Was it more than 20?
4   A.   I don't recall.
5   Q.   What else did you do to prepare
6 for your report to discuss header bidding?
7   A.   Can you ask the question again?
8   Q.   I'll ask it slightly different.
9   A.   Okay.
10   Q.   What are all the things you did
11 to prepare for your report to discuss header
12 bidding?
13   A.   So for this particular matter,
14 once retained I built a small investigative team
15 that reviewed a totality of documents made
16 available to us, understood them, conducted
17 extensive open source research, started to frame
18 up a report and our concepts, continued that
19 work through verifying various pieces of
20 information that we learned and finalized the
21 report.
22   Q.   How many open source -- sources
23 did you read that discussed header bidding?
24   A.   Lots.
25   Q.   More than a hundred?

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1   A.   I'm sure. I mean, I feel like
2 since retained, again, back to my statement
3 earlier, I mean, that's all we do, and I'm just
4 one of a few members of the team.
5   Q.   Did you review any academic
6 journals that discussed header bidding?
7   A.   I couldn't say definitively.
8   Q.   You still have your report in
9 front of you?
10   A.   I do.
11   Q.   I want to talk to you about
12 Appendix C, which starts on page 47. Just let
13 me know when you're there.
14   A.   Yes, I'm here.
15   Q.   Am I correct that this is a
16 series of graphs that is depicting information
17 from Google's 2020, 2021 and 2022 Ad Safety
18 Reports?
19   A.   That is correct.
20   Q.   So I want to start with the first
21 figure, which you identified as Figure I, and
22 that is showing ads that were blocked or
23 restricted by Google for "Abusing the Network,"
24 right?
25   A.   I'm just -- where did you read

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1 that?
2   Q.   I'm just looking at the title of
3 the graph of Figure I. The title of the graph
4 is "Abusing the Ad Network" correct?
5   A.   I see the actual graph itself.
6 It says "Abusing the Ad Network" at the top,
7 yes.
8   Q.   How are you defining what is
9 abusing the ad network?
10   A.   I'm not, Google is.
11   Q.   How did Google define "Abusing
12 the Ad Network"?
13   A.   They have documentation on it.
14   Q.   What is your understanding how
15 Google is defining the phrase "Abusing the Ad
16 Network"?
17   A.   Again, they have documentation on
18 it and I've referenced it, and they have set
19 policies and when they believe it was a
20 violation of those policies.
21   Q.   I'm asking as you sit here today
22 what is your recollection of how Google defined
23 "Abusing the Ad Network"?
24   A.   A violation of their policy.
25   Q.   What is your understanding of

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1 what type of ads would violate a Google ad
2 policy?
3   A.   I'm sorry, could you reask the
4 question?
5   Q.   I'll phrase it slightly
6 differently.
7   Can you give me an example of a
8 type of ad that would have violated Google's ad
9 policy?
10   A.   Sure. An ad that would look to
11 exploit the ecosystem, the ad ecosystem,
12 something that may try to conduct ad fraud.
13   Q.   How does Google determine whether
14 a particular ad violates one of their policies?
15   A.   How does Google determine that?
16   Q.   Yeah.
17   A.   Well, based on some of the
18 documentation that I've read, they -- it appears
19 they open cases and in -- adjudicate it like any
20 other technical incident responder would
21 adjudicate a matter. They would investigate it
22 and understand what's happening, why it's
23 happening, who's responsible.
24   Q.   What documentation did you review
25 or read that discusses how they would determine

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1 whether an ad fit or violated one of their
2 policies?
3   A.   So I can't, as I sit here, point
4 you to the exact document. And I can also
5 further state that the document I read was not a
6 playbook in how they determine this. But what I
7 can tell you as a security professional, I read
8 documents that to me, as a security professional
9 who handles incidents every day and has helped
10 companies build incident response processes and
11 systems, that the documents that I viewed were
12 very clear to me that Google was investigating
13 and adjudicating an incident.
14   Q.   You used the phrase that Google
15 would open cases to make this determination; is
16 that right?
17   A.   I can't recall if I used that
18 exact term, but we can maybe -- we can either --
19   Q.   Whether you used it in the past,
20 do you agree that Google would open cases to
21 determine if a particular ad violated its
22 policies?
23   A.   So based on documents that I
24 reviewed, I did see what appeared to me as a
25 security professional -- professionals at Google

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1 discussing malicious behavior that had been
2 flagged.
3   Q.   Did you review e-mail
4 communications between those who worked at
5 Google discussing whether an ad violated one of
6 its policies?
7   A.   I did not. I -- I'm sorry, let's
8 reask the question.
9   Q.   Did you review any e-mail
10 communications between those who worked at
11 Google discussing whether an ad violated one of
12 its policies?
13   A.   To answer your specific question,
14 did I review any e-mails in which Google
15 employees discussed if an advertisement violated
16 their policies? I did not review an e-mail like
17 that that I can recall.
18   Q.   So what did you mean when you
19 said that "based on documents that I reviewed, I
20 did see what appeared to me as a security
21 professional -- professionals at Google
22 discussing malicious behavior that had been
23 flagged"?
24   A.   I don't recall the exact content
25 of the e-mail and what was being discussed, the

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1 malicious activity that was being discussed.
2 But I recall reading e-mails and thinking to
3 myself as a security professional that this
4 looks like to me that this is professionals
5 discussing potential policy violations, and they
6 were looking to investigate it and understand
7 it.
8   Q.   Okay. I think you said two
9 different things, and I just want to be clear.
10   Did you review any e-mails of
11 Google employees discussing if an advertisement
12 violated one of their policies?
13   A.   I reviewed e-mails in which I
14 believe Google professionals were discussing
15 potential violations of policies. It appeared
16 to be based on my professional assessment, that
17 they were actively conducting an investigation
18 into something that they thought was a violation
19 of policy.
20   Q.   Then why did you testify
21 previously "I did not review an e-mail like that
22 that I can recall"?
23   A.   Because you asked if it was
24 specific to advertising fraud, and I'm saying I
25 don't recall exactly what it involved. That's

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1 why I repeated your question and was specific in
2 the words I used.
3   Q.   Did you cite any of these e-mail
4 communications that you reviewed in your report?
5   A.   I can't recall. I mean, if
6 they're in -- I can't recall.
7   Q.   Well, go to Appendix B of your
8 report, which is page 41, and please point to me
9 the e-mail communication that you have reviewed
10 in preparation of this report.
11   MS. MAUSER: Object to form.
12   Mischaracterizes his testimony.
13   THE WITNESS: I can't recall
14   which one it was. And if I don't
15   actually reference that exchange in my
16   report, I'm not sure if it would be
17   here.
18 BY MR. FREEMAN:
19   Q.   All right. I'm not asking
20 whether it should be there. I'm just asking
21 you: is there any e-mail communication
22 referenced in your report?
23   A.   As I sit here and flip through
24 this, I just can't recall, I'm sorry. There's a
25 lot of material that I reviewed.

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```
 1        Q.     Is it fair to say, as we sit here
 2 today, you can't point me to any e-mail
 3 communication that is cited in your report?
 4             MS. MAUSER:  Object to form.
 5             THE WITNESS:  Your question is:
 6        is a citation in my report that
 7        references an e-mail.  I mean, we have
 8        to look at every single one of them.  Do
 9        you want to do that?
10 BY MR. FREEMAN:
11        Q.     I'm asking you: can you point to
12 an e-mail communication that was cited in your
13 report?
14        A.     And I've answered if you want me
15 to point to an e-mail, I would have to go
16 through my citations, and I'm happy to do that.
17        Q.     Okay.  Do that.
18        A.     Go through every single citation.
19 Do you have them?
20        Q.     No, I'm saying look at the list
21 in Appendix B and point to me --
22        A.     Let's look at the content.  Let's
23 look at the content of them.  I would have to
24 look at the content.  I mean, the two at the
25 bottom are just letters and numbers.  If you
```

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```
 1 want me to answer your question right now, like
 2 I would have to go through them, and I'm happy
 3 to do it.
 4        Q.     Do you recall, as you sit here
 5 today, citing an e-mail communication between
 6 two Google employees discussing whether an ad
 7 violated one of its policies?
 8             MS. MAUSER:  Objection, asked and
 9        answered.
10             THE WITNESS:  As I've said, I
11        don't recall if it's in my report, cited
12        in my report.  I do recall reviewing it.
13 BY MR. FREEMAN:
14        Q.     Back to Figure I in Appendix C,
15 did you review the underlying data that supports
16 that graph?
17        A.     I did not.
18        Q.     What did you do to confirm its
19 accuracy?
20        A.     To confirm its accuracy?  I
21 didn't do anything.  I didn't think I needed to.
22        Q.     So this graph is showing the
23 number of ads blocked or restricted that fit the
24 "abusing the ad network" definition by Google,
25 right?
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```
 1        A.     Can you reask your question?
 2        Q.     Sure, I'll ask you this:  What is
 3 Figure I showing?
 4        A.     Figure I is a graph pulled from
 5 Google's publication, from the 2020, 2021 and
 6 2022 Ad Safety Report list categories of bad
 7 ads, removal year after year.
 8        Q.     How many ads that met the
 9 definition of abusing the network, the ad
10 network, were not blocked or restricted by
11 Google?
12        A.     I can't answer that.
13        Q.     So to ask a slightly different
14 way.  What is the detection rate by Google for
15 ads that are abusing the ad network during this
16 period?
17        A.     You're asking me -- I'm sorry,
18 can you repeat the question?
19        Q.     What was the detection rate by
20 Google for ads that were abusing the ad network
21 during this period?
22        A.     You're asking me Google's
23 detection rate?
24        Q.     That's right.
25        A.     I'm not sure if I can answer
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```
 1 that.
 2        Q.     Why can't you answer it?
 3        A.     Because I'm not sure if I've had
 4 access to -- I can't recall if I had access to
 5 that data.
 6        Q.     So do you know what percent of
 7 ads that met that definition were actually
 8 blocked or restricted by Google?
 9        A.     I'm not sure I'm understanding
10 your question.  We're talking about Figure I.
11 Do I know what percentage of ads that were
12 blocked --
13        Q.     That's right.
14        A.     -- that fit the policy of abusing
15 the ad network?  I just want to make sure we're
16 looking at the same page here.
17        Q.     Figure I is the sheer quantity of
18 ads that were blocked or restricted by Google
19 for abusing the ad network, correct?
20        A.     Correct.
21        Q.     And what I'm trying to figure out
22 is what percentage of ads that would fit the
23 "abusing the ad network" definition by Google
24 were not blocked or restricted?
25        A.     So you're asking me how many ads
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1 made it through the network that were not
2 blocked?
3   Q.   That's correct.
4   A.   I can't answer that.
5   Q.   Why can't you answer that?
6   A.   You're asking me how many ads
7 went through the Google network? I want to make
8 sure we're speaking the same language here.
9 You're asking me how many ads went through the
10 Google network that were not blocked?
11   Q.   That should have been.
12   A.   That should have been. So how
13 many ads went through the Google network, Google
14 is telling us how many were blocked, but I'm --
15 you're asking me if I know how many that Google
16 didn't blocked that should have been blocked?
17   Q.   That's right.
18   A.   I can't answer that question.
19   Q.   Why can't you answer that
20 question?
21   A.   I'm confused. You're asking me
22 how many ads go through the Google network.
23 Google has technologies and policies in place to
24 block ads, and you're asking me how many ads did
25 not get blocked by their technologies and

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1 policies, yet still made it through the ad
2 network?
3   Q.   Correct.
4   A.   I can't answer that.
5   Q.   Did you review any documents that
6 would have provided that answer of the detection
7 rate that Google had of abusing the network ads
8 during this timeframe of 2020 to 2022?
9   A.   A Google document?
10   Q.   No, any document.
11   A.   I can't recall.
12   Q.   During the same time from 2020 to
13 2022 and using the same definition, how many ads
14 were blocked or restricted for abusing the
15 network by Amazon?
16   A.   I can't answer that question.
17   Q.   Why can't you answer that
18 question?
19   A.   Actually, yeah, let me rephrase
20 my answer.
21   I can't recall.
22   Q.   During this same time period,
23 2020 to 2022, and using the same definition, how
24 many ads were blocked or restricted for abusing
25 the network by PubMatic?

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1   A.   I can't recall.
2   Q.   During the same timeframe and
3 using the same definition, how many ads were
4 blocked or restricted for abusing the network by
5 OpenX?
6   A.   I just want to be clear, you keep
7 saying "the same definition." Are we using
8 Google's definition?
9   Q.   Using Google's definition.
10   A.   Using Google's definition
11 PubMatic -- you're asking me how many
12 advertisements PubMatic blocked based on
13 Google's definition. Wouldn't we use PubMatic's
14 definition?
15   Q.   Sure. Do you know that answer?
16   How many -- during 2020 to 2022,
17 how many ads were blocked or restricted for
18 abusing the network by PubMatic using PubMatic's
19 definition?
20   A.   I can't recall.
21   Q.   You can't recall or you didn't
22 see it?
23   A.   I can't recall if I saw it.
24   Q.   During the same timeframe, how
25 many ads were blocked or restricted for abusing

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1 the network by Amazon?
2   A.   I can't recall if I saw that.
3   Q.   How many ads were blocked or
4 restricted during this timeframe for abusing the
5 network by Criteo?
6   A.   I can't recall if I saw that.
7   Q.   How many ads were blocked or
8 restricted by abusing the network by The Trade
9 Desk?
10   A.   I can't recall if I saw that.
11   Q.   How many ads were blocked or
12 restricted for abusing the network by Index
13 Exchange?
14   A.   I can't recall if I saw that.
15   Q.   How many ads were blocked or
16 restricted for abusing the network by Xandr?
17   A.   I can't recall if I saw that.
18   Q.   How many ads were blocked or
19 restricted for abusing the network by Magnite?
20   A.   I can't recall if I saw that.
21   Q.   How many ads were blocked or
22 restricted for abusing the network by Meta?
23   A.   I can't recall if I saw that.
24   Q.   Did you try to search for
25 information that would have given answers about

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1 how many ads were blocked or restricted by any
2 of those companies?
3   A.   I'm sure I did. I'm sure I
4 looked for it.
5   Q.   So is it fair to say that the
6 numbers listed or the graph in Figure I, you
7 don't know how those numbers compare to other
8 companies within the digital advertising
9 ecosystem; is that right?
10   A.   No.
11   Q.   No, that's not right?
12   A.   I don't agree with your
13 statement.
14   Q.   How does the amount that Google
15 blocked or restricted of ads in 2020 to 2022,
16 how does that compare to the amount of ads that
17 were blocked or restricted by any other company
18 in the digital advertising ecosystem?
19   A.   How does it compare?
20   Q.   Yeah.
21   A.   I mean, it depends how you look
22 at the data, how you unpack the data.
23   Q.   Can you testify today that Google
24 blocked the most ads for abusing the network
25 during 2020 to 2022?

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1   A.   Can I testify today, as I sit
2 here right now, that they blocked the most? No,
3 I can't testify to that because I don't know if
4 that's true.
5   Q.   All right. So back to my
6 question, though, which is: would you agree that
7 you do not know how Google's numbers from 2020
8 to 2022 about blocking ads that were abusing the
9 network, how that compares to any other company?
10   A.   No, I'm not saying that. I'm
11 saying -- what I'm saying is that there's no
12 single truth to this data. There's a lot of
13 data out there about blocking ads. And a lot of
14 that data, from what I gathered, is some of it
15 is self reported, some of it is looked at in
16 different chunks, different time frames. So to
17 have an authority that states very clearly the
18 question that you're asking, it's just not that
19 clear. It's very, very gray.
20   And so in my report I cite
21 Google's material alone because Google is my
22 client, and this was publicly available on their
23 website, and I thought it relevant to this case.
24   Q.   Did you do any sort of
25 comparative analysis of how these numbers in

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1 Figure I compared to any other company in the
2 market?
3   A.   We did look at numbers, but you
4 have to appreciate numbers are numbers. The
5 question is: is how are those numbers derived,
6 the definitions of what gets you those numbers.
7   Policies are written in a way
8 that they're interpreted by each organization.
9 And so what Google may view as abusing the ad
10 network, as they've titled this graph, those
11 other companies may not use the same exact
12 definition. And so therefore, their numbers may
13 be different.
14   And so in the interest of
15 verifying information and being clear and not
16 seeing a source, a verified source of truth with
17 consistent data and definitions, I didn't
18 include it in the report.
19   Q.   Did you look for Amazon's
20 published information about how many ads they
21 blocked in any particular year?
22   A.   Of course. But back to my point,
23 different organizations are going to create
24 their policies and then enforce their policies
25 different. And having worked extensively in

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1 this industry and worked extensively for big
2 tech, I assure you that they all have different
3 Rosetta Stones in which they decipher this for a
4 reason.
5   Q.   Are you testifying that Figure I
6 and the underlying data to support it, it's
7 impossible to compare that to other companies?
8   A.   There's one thing I've learned in
9 my profession, there are no definitives. What
10 I'm saying is that it's very gray. And in the
11 interest of clarity in my report, I wasn't able
12 to find something that I thought fairly
13 evaluated them.
14   And, again, couple that with my
15 experience in the industry, the last seven years
16 I've worked extensively in big tech, their
17 policies are different, they view data
18 differently, they categorize data differently,
19 and the numbers mean different things.
20   MR. FREEMAN: This is a good
21   breaking point. I don't know if you
22   want -- it's almost 1:00 for lunch.
23   MS. MAUSER: That's fine by me.
24   THE VIDEOGRAPHER: Off the record
25   12:50. This ends media unit three.

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 1              (Luncheon recess.)
 2              THE VIDEOGRAPHER:  On the record
 3         at 1:33.  This begins media unit four in
 4         the deposition of Anthony Ferrante.
 5  BY MR. FREEMAN:
 6         Q.      We left off talking about the
 7  first figure in Appendix C.  I now want to move
 8  to the second figure in Appendix C so on page
 9  48, the top of that the graph that says "Adult
10  Content."
11              Do you see that?
12         A.      I do see that.
13         Q.      What is the definition of adult
14  content ad?
15         A.      I'm not sure.  I would reference
16  the Google material citing the various policies
17  and their definitions.
18         Q.      How does Google determine whether
19  a particular ad fell into this category of
20  "adult content"?
21         A.      Consistent with the same -- the
22  subcategory abusing the ad network, they have a
23  policy that's written.  And when they believe --
24  they have a policy written that defines adult
25  content.  And when they believe an ad that fits
```

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```
 1  So let's be clear, right, Figure J is from the
 2  timeframe of 2020 to 2022?
 3         A.      Correct.
 4         Q.      Right, let me ask this generally.
 5              What is Figure J depicting in
 6  Appendix C?
 7         A.      Figure J is depicting the
 8  subcategory of bad ads removed by Google that
 9  violated their -- Google's policy as defined as
10  adult content.
11         Q.      So one category of "bad ads" was
12  abusing the ad network?
13         A.      Correct, the subcategory was
14  abusing the ad network, that is correct.
15         Q.      And then a separate subcategory
16  is adult content?
17         A.      That is correct.
18         Q.      All right.  So my question is:
19  during this timeframe of 2020 to 2022, did you
20  see any information that would show how many
21  adult content ads were shown through -- that
22  went through Google's platforms?
23         A.      Adult content ads that were shown
24  through Google's advertising platform?  Are
25  these adult content ads that violated their
```

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 1  or violates that policy, is attempted to be
 2  shown, they flag it.
 3         Q.      Is that a manual process?
 4         A.      You know, I'm not sure.  I'm sure
 5  there are technologies in place, just given the
 6  volume that I would expect.
 7         Q.      Did you review any of their
 8  source code for any of their automated filters?
 9         A.      No, I did not.
10         Q.      Did you review any of the
11  underlying data supports Figure J in Appendix C?
12         A.      No, I did not.
13         Q.      How did you confirm the
14  accuracies of those particular numbers?
15         A.      How did I confirm the accuracy of
16  these numbers?
17         Q.      Yeah.
18         A.      I didn't.
19         Q.      Back to similar questions that I
20  asked you about the abusing the ad network of
21  how many ads made it through Google's platforms
22  that were shown that should have been blocked or
23  restricted?
24         A.      Are you speaking in general?
25         Q.      During this particular timeframe.
```

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```
 1  policy?
 2         Q.      That's right.
 3         A.      Again, no, to consistent with my
 4  answer to the last subcategory on abusing the ad
 5  network, I don't have the data or the means to
 6  even --
 7         Q.      Did you look for the data that
 8  would support how effective their filters were
 9  in filtering out the adult content ads?
10         A.      Did I look at Google's filters?
11         Q.      Not necessarily the filters
12  itself.
13              Did you look for any data that
14  would indicate how many adult content ads went
15  through their platforms but were not blocked?
16         A.      So you're asking me Google has
17  filters -- Google has technologies and policies
18  in place to flag what they deem policy
19  violations?  And in this case we're speaking
20  about adult content.  You're asking me how many
21  ads were not blocked or removed yet they should
22  have been?
23         Q.      That's right.
24         A.      I can't answer that.
25         Q.      Why can't you answer it?
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1	A.	I don't have the data.
2	Q.	Did you look for the data?
3	A.	I'm not even sure that question

4 -- I'm not even sure -- I'm not even sure if
5 that question can be answered. What you're
6 asking is attempts, malicious activity attempts
7 at an organization that are engineered in a way
8 that bypass controls and make it through. So
9 you're asking me to quantify bad ads that were
10 not deemed bad ads by existing policies and
11 technologies in the first instance?
12   Q.   Correct.
13   A.   I can't answer that.
14   Q.   Do you know whether Google tried
15 to analyze how effective their filters were in
16 filtering out adult content ads?
17   A.   Do I know?
18   Q.   Yeah, do you know?
19   A.   I do not know.
20   Q.   During this same time period of
21 2020 to 2022, how many ads were blocked or
22 restricted for adult content by Amazon?
23   A.   I can't recall.
24   Q.   Are you saying you had that
25 information at one point in time?

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1   A.   I can't recall as I sit here
2 right now. I'm sure I saw -- again, I saw lots
3 of data related to other players in this space.
4   Q.   Then how did the data that you
5 saw from other companies compare to Figure J?
6   A.   I can't recall.
7   Q.   Did you look at how many ads were
8 blocked or restricted by Meta that were adult
9 content?
10   A.   I can't recall specifically.
11   Q.   Do you know how many ads were
12 blocked or restricted for being adult content by
13 Criteo?
14   A.   Again, I cannot recall
15 specifically.
16   Q.   During the same timeframe, do you
17 know how many ads were blocked or restricted for
18 being adult content by The Trade Desk?
19   A.   I cannot recall specifically.
20   Q.   Do you know how many ads were
21 blocked or restricted for being adult content by
22 OpenX?
23   A.   I cannot recall.
24   Q.   Do you know how many ads were
25 blocked or restricted for being adult content

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1 during this timeframe by Magnite?
2   A.   I cannot recall.
3   Q.   Do you know how many ads were
4 blocked or restricted for being adult content
5 during this timeframe by PubMatic?
6   A.   I cannot recall.
7   Q.   Do you know how many ads were
8 blocked or restricted for being adult content
9 during this timeframe by Index Exchange?
10   A.   I cannot recall.
11   Q.   Do you know how many ads were
12 blocked or restricted for being adult content
13 during this timeframe by Xandr?
14   A.   I cannot recall.
15   Q.   So then is it fair to say that
16 you don't know how Google's numbers compared to
17 other companies with blocking or restricting ads
18 that were adult content, right?
19   A.   Based on the information
20 available to me and through the course of my
21 investigation, I was not able to do that equal
22 comparison. As I stated last time, this data is
23 not consistent across platforms. And the way
24 that these organizations interpret that data or
25 set these policies and how they enforce these

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1 policies, it varies.
2   As I said before, my experience
3 is different tech companies view this data
4 differently.
5   Q.   Again, that you are not able to
6 make that comparison, or you just chose not to
7 make that comparison?
8   A.   I looked for data.
9   Q.   But you don't know what that --
10 as you sit here today, what that data showed?
11   A.   That data -- there was no -- that
12 I can recall, and I would have put it in my
13 report, there was no clear, verifiable source
14 that evaluated this type of data in a way that I
15 believed was understandable and I could speak to
16 as an expert in the industry.
17   Q.   Does a company like Amazon also
18 have policies and procedures of what type of
19 content is permitted in their ads?
20   A.   I'd have to imagine, yes.
21   Q.   Have you reviewed those policies?
22   A.   What is publicly available.
23   Q.   Did you do any sort of comparison
24 of how Amazon's policies and procedures related
25 to content of ads compared to that of Google's?

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```
 1         A.     Is there a specific content you
 2   want to high -- you want to speak about?
 3         Q.     Sure.
 4                Did you compare the policies and
 5   procedures for adult content on Amazon and
 6   compared that to the definition by Google?
 7         A.     Again, what is publicly available
 8   is what I looked at.
 9         Q.     I'm saying did you compare
10   publicly available information about Amazon's
11   policies compared to Google's policies as it
12   relates to adult content in ads?
13         A.     I read both Google and Amazon and
14   others' policies that were publicly documented
15   on the web.
16         Q.     How does Amazon's policies
17   related to adult content differ from that of
18   Google's?
19         A.     I can tell you that what is
20   publicly available on the web is very high
21   level.
22         Q.     How does Amazon's policies
23   related to adult content differ from that of
24   Google's?
25         A.     I mean, as I sit here right now,
```

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```
 1   I can't tell you the comparison.
 2         Q.     How does Criteo's related to
 3   adult content differ from that of Google's?
 4         A.     As I sit here right now, I can't
 5   articulate that.
 6         Q.     What about The Trade Desk, how
 7   does The Trade Desk policies related to adult
 8   content differ from that of Google's?
 9         A.     As I sit here right now, I can't
10   articulate that.
11         Q.     How does OpenX's policies related
12   to adult content differ from that of Google's?
13         A.     As I sit here right now, I cannot
14   articulate that.
15         Q.     How does Magnite's policies
16   related to adult content differ from that of
17   Google's?
18         A.     As I sit here right now, I cannot
19   articulate that.
20         Q.     How does PubMatic's policies
21   related to adult content differ from that of
22   Google's?
23         A.     As I sit here right now, I cannot
24   articulate that.
25         Q.     How does the Index Exchange
```

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```
 1   policies differ from adult content that of
 2   Google's?
 3         A.     As I sit here right now, I cannot
 4   articulate that.
 5         Q.     How does Xandr's policies related
 6   to adult content differ from that of Google's?
 7         A.     As I sit here right now, I cannot
 8   articulate that.
 9         Q.     Moving down to Figure K, still in
10   Appendix C, what is Figure K?
11         A.     Figure K its another subcategory
12   of bad ads blocked or removed by Google.  The
13   subcategory is titled "Inappropriate Content."
14         Q.     What type of ad is incorporated
15   in inappropriate content?
16         A.     What type of ad?
17         Q.     I'll phrase it slightly
18   different.
19                What type of ad violates Google's
20   policies as it relates to inappropriate content?
21         A.     An ad that Google, their
22   technologies and their -- I'll call them
23   investigators -- believe violate their policy.
24         Q.     That's what I'm asking.  What is
25   Google's definition of inappropriate content?
```

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```
 1         A.     I don't have it off the top of my
 2   head.
 3         Q.     Did you review the underlying
 4   data that supports Figure K?
 5         A.     I did not.
 6         Q.     What did you do to confirm the
 7   accuracy of the numbers that are depicted in
 8   Figure K?
 9         A.     I didn't think I needed to.
10         Q.     Why didn't you think you needed
11   to?
12         A.     Because it's publicly available
13   content on Google's site.
14         Q.     Isn't it possible that publicly
15   available content is inaccurate?
16         A.     Of course it is.
17         Q.     So why would you feel -- why
18   would you not feel the need to verify whether
19   publicly available data is correct?
20         A.     I'm not sure what your question
21   is.
22         Q.     You said you didn't feel a need
23   to verify whether the publicly available data
24   was correct; am I right with that?
25         A.     That is correct.
```

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1   Q.   My question is: why didn't you
2 feel a need to verify the publicly available
3 data that Google had?
4   A.   I reviewed a lot of material
5 throughout the course of this investigation. In
6 addition to me, I led a team of investigators
7 who did the same.
8   When it came to published
9 statistics and material on the Google.com
10 domain, while of course we looked at it and
11 questioned it, going back to my client and
12 verifying it, I did not think was a good use of
13 our time.
14   Q.   How did you question it?
15   A.   Reading it in its totality,
16 understanding the data presented with it,
17 reading the various support documents included
18 with it.
19   Q.   You said "understanding the data
20 that was presented with it."
21   What data was presented with this
22 information as indicated in any of the charts in
23 Appendix C?
24   A.   Well, this data is pulled from
25 Google support documents as they document how

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1 they do certain things, conduct certain
2 operations within Google. And in my experiences
3 working with a lot of big tech companies, of
4 course I read -- I didn't just look at a chart.
5 I looked at the surrounding documents. I looked
6 at what was publicly available, how they defined
7 certain things. Of course they gave examples.
8 They talk about the work that they put into it.
9 And so when you said how did I question it? I
10 questioned it to see if it was consistent with
11 my other clients and how they view this stuff.
12   Q.   What surrounding documents did
13 you review for the information that's contained
14 in the charts in Appendix C?
15   A.   I forget the exact name of it,
16 but it's a publicly available Google document
17 centered around their policies.
18   Q.   Are you aware of any time where
19 Google had to correct or amend a public document
20 for being inaccurate?
21   A.   Google, the company?
22   Q.   Yeah.
23   A.   I'm sure that's happened.
24   Q.   So then why would you take the
25 numbers as reported in Google's ad safety

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1 reports for these years as truth?
2   A.   Because I think in totality,
3 given the scope of my work, the fact of the
4 matter is that Google is making efforts in this
5 space. They're talking about their policies.
6 They're talking about -- they're being
7 transparent with their statistics. Whether or
8 not this data was a hundred percent accurate or
9 needed a correction as you pointed out doesn't
10 change my views and my findings.
11   Google is an innovator. They're
12 a leader, and they're setting examples for the
13 industry. I read their policy documents; they
14 were consistent with my work in this space, and
15 I moved on.
16   Q.   Are those the policy documents
17 that you can't recall what the subject matter is
18 as you sit here today?
19   MS. MAUSER: Object to the form.
20   Mischaracterizes testimony.
21   THE WITNESS: Excuse me?
22 BY MR. FREEMAN:
23   Q.   You said that you relied on
24 policy documents to support the graphs in
25 Appendix C, right?

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1   A.   Mm-hmm.
2   Q.   What policy documents?
3   A.   I forget the name of the title.
4   Q.   What was the substance of the
5 policy documents?
6   A.   It aligned what -- you know,
7 they're publicly available definitions of what
8 each subcategory is, talks about the work they
9 do to flag this content and take it down. I
10 forget the exact title, but it's in my report.
11 I'm sure it's referenced. Ad Safety Report.
12   Q.   Does the Ad Safety Report define
13 the term "adult content"?
14   A.   Define the term "adult content"?
15 It describes it. I wouldn't necessarily suggest
16 that it defines it to the exact extent that the
17 legal definition might suggest or might want it
18 to be. I would say that it has language
19 publicly available in their document to give the
20 reader a better understanding of it.
21   Q.   What is contained in the Ad
22 Safety Reports that give you an understanding of
23 what type of ads qualify as adult content?
24   MS. MAUSER: Object to form.
25   THE WITNESS: Can you show me the

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```
 1          Ad Safety Report, and we can walk
 2          through it?
 3   BY MR. FREEMAN:
 4          Q.    I'm asking do you remember
 5   anything within the Ad Safety Report?
 6          A.    You're asking me if I remember it
 7   off the top of my head?
 8          Q.    That's correct.
 9          A.    I'd be happy to discuss the Ad
10   Safety Report with you in the publicly available
11   definitions of the subcategories if you present
12   it to me.
13                If you're asking me if I've
14   memorized the Ad Safety Report, I'm going to
15   tell you that I have not.
16          Q.    I'm asking if you know, sitting
17   here today, whether you know how Google defines
18   "adult content"?
19          A.    I've answered that question.
20          Q.    I don't think you have, sir.
21          A.    Okay.
22          Q.    Do you remember --
23          A.    We can agree to disagree.  I
24   believe I've answered the question.
25          Q.    Do you remember how Google has
```

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```
 1   defined "adult content"?
 2                MS. MAUSER:  Object to form.
 3          Asked and answered.
 4   BY MR. FREEMAN:
 5          Q.    You have to answer.
 6          A.    I have answered.  As I sit here
 7   today, I have not memorized the Ad Safety
 8   Report.  I know Google has listed their publicly
 9   available criteria of what they view as adult
10   content.  If you have the report, I'm happy to
11   walk through it with you.
12                MR. FREEMAN:  I'm going to
13          mark -- which is Ferrante Lit Exhibit --
14          we're at 3, correct?
15                THE WITNESS:  Correct.
16                (Document marked for
17          identification as Ferrante-Lit
18          Deposition Exhibit No. 3.)
19   BY MR. FREEMAN:
20          Q.    Just for identification this is
21   the 2021 Ad Safety Report being one of the
22   things referenced to make Appendix C charts; is
23   that correct?
24          A.    Okay.  So what's your question?
25          Q.    I'm asking is that correct?
```

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```
 1          A.    What's your question, is what I
 2   asked.
 3          Q.    That Ferrante deposition Exhibit
 4   Number 3 is one of the reports that form the
 5   basis of the charts as listed in Appendix C?
 6          A.    I didn't create these charts.
 7   Google created these charts.
 8          Q.    No, did you rely -- you're saying
 9   Google made these charts?
10          A.    Yes.
11          Q.    So what did you do in preparation
12   for Appendix C?
13          A.    What did I do?
14          Q.    Well, you're saying you didn't
15   make the charts.
16          A.    I reviewed the material and
17   provided it in the report.
18          Q.    Okay.  So is -- back to my
19   question, is Ferrante Litigation Exhibit Number
20   3 in front of you one of the reports that
21   supports the numbers in the graphs in Appendix
22   C?
23          A.    This is the "Ads Safety Report"
24   that's referenced on page 51 that says
25   "Similarly, Google's 2020, 2021 and 2022 Ad
```

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```
 1   Safety Report lists categories of web pages
 2   removed year after year." This is talking about
 3   in that language that I reference that talks
 4   about web pages.
 5          Q.    Doesn't Ferrante Lit Exhibit 3
 6   form part of the basis of Figure I, Figure L and
 7   Figure J and Figure K?
 8          A.    You're asking me if I took the
 9   data from 3 and created these graphs?
10          Q.    Actually just --
11          A.    These graphs --
12          Q.    Where did the data come from to
13   make the graph of Figure I?
14          A.    I'm sure it's cited in my report.
15   I don't know exactly where.
16          Q.    Is one of the basis -- if you
17   read the top of Appendix C, "Google's 2020, 2021
18   and 2022 Ad Safety Reports lists categories of
19   'bad ads' removed year after year."
20                Do you see that?
21          A.    I do.
22          Q.    It says "The following graphs
23   demonstrate that Google has consistently removed
24   a high volume of bad ads for Adult Content,
25   Inappropriate Content, Misrepresentation,
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1 Enabling Dishonest Behavior, Dangerous Products
2 or Services, Counterfeit Goods and Abusing the
3 Ad Networks."
4   Do you see that?
5   A.   Yes, I see that.
6   Q.   So were Google's 2020, 2021 and
7 2022 Ad Safety Reports the basis of -- contain
8 the information that makes the charts in
9 Appendix C?
10   A.   Yes.
11   Q.   Okay. You had indicated that
12 this particular report would help define or
13 suggest what fits into these subcategories,
14 right?
15   A.   It would have language. As I
16 stated, it would be language that would be
17 publicly available and would not be at the
18 caliber of legally binding language but language
19 that someone could review and understand and
20 help them understand.
21   Q.   Okay. Point to me where in this
22 exhibit the language that would help a reader
23 understand what "abusing the ad network" means?
24   A.   I mean, it's this entire
25 document. If you sit down and read it, it

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1 starts right at the beginning, "When we make
2 decisions about ads and other monetized content
3 on our platform, user safety is at the very top
4 of our list. In fact, thousands of Googlers
5 work around the clock to prevent malicious use
6 of our advertising network and make it safer for
7 people, businesses and publishers."
8   Q.   I'm asking you how would a reader
9 know --
10   MS. MAUSER: I object to the form
11   to the extent this doesn't -- isn't a
12   complete document.
13   MR. FREEMAN: Okay.
14 BY MR. FREEMAN:
15   Q.   How does a reader know what type
16 of ad violated its abusing the ad network
17 policy?
18   MS. MAUSER: Again, I object to
19   form to the extent this isn't a complete
20   document.
21 BY MR. FREEMAN:
22   Q.   You can answer.
23   A.   I would say by reviewing this
24 document and then looking at the subcategories.
25   Q.   But you had indicated there would

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1 be language within these Ad Safety Reports that
2 would help a reader understand what Google's
3 definition of "adult content" would be, correct?
4   A.   That is what I said.
5   MS. MAUSER: Object to form,
6   again, to the extent this is an
7   incomplete document.
8 BY MR. FREEMAN:
9   Q.   So what -- so what language
10 contained in the Ad Safety Report from 2021
11 helps a reader understand what is Google's
12 policy as it relates to adult content?
13   MS. MAUSER: Object to form
14   again. Same objection.
15   THE WITNESS: As I said earlier,
16   the language is in a publicly available
17   document for the general public to
18   review, and this is not legally binding
19   language. So I said it will give you an
20   idea.
21 BY MR. FREEMAN:
22   Q.   How do you have any idea of what
23 type of ad would violate the adult content
24 policy of Google by looking at the Ad Safety
25 Report from 2021?

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1   MS. MAUSER: Object to form, to
2   the extent this isn't the complete
3   document.
4   THE WITNESS: By reading this
5   document and then looking at the
6   subcategories.
7 BY MR. FREEMAN:
8   Q.   How do you have any idea of what
9 type of ad would violate the adult content
10 policy of Google by looking at the Ad Safety
11 Report from 2021?
12   MS. MAUSER: Object to form again
13   for the same reason.
14   THE WITNESS: I've answered the
15   question. If you read the document and
16   then look at the subcategories, you get
17   an idea. You asked me how would you
18   have any idea? You get an idea. Is it
19   an idea that is going to be something
20   that is debated in court? I'm not
21   stating that; I'm not an attorney. But
22   as an expert in the industry and having
23   helped organizations frame these very
24   documents, in my experiences this is
25   enough to document their policies around

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1   this type of material.
2   BY MR. FREEMAN:
3   Q.   During 2020 to 2022, how many ads
4   were blocked or restricted for inappropriate
5   content by Amazon?
6   A.   I can't answer that as I sit here
7   right now.
8   Q.   How many ads were blocked or
9   restricted for inappropriate content by Meta?
10   A.   I can't answer that as I sit here
11   right now.
12   Q.   How many ads were blocked or
13   restricted for inappropriate content by Criteo?
14   A.   I can't answer that as I sit here
15   right now.
16   Q.   How many ads were blocked or
17   restricted by The Trade Desk for inappropriate
18   content?
19   A.   I can't answer take as I sit here
20   right now.
21   Q.   How many ads were blocked or
22   restricted by OpenX for inappropriate content?
23   A.   I can't answer that as I sit here
24   right now.
25   Q.   How many ads were blocked or

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1   restricted by Magnite for inappropriate content
2   during this timeframe?
3   A.   I can't answer that as I sit here
4   right now.
5   Q.   How many ads were blocked or
6   restricted for inappropriate content by PubMatic
7   during this timeframe?
8   A.   I can't answer that as I sit here
9   right now.
10   Q.   How many ads were blocked or
11   restricted by Index Exchange during this
12   timeframe for inappropriate content?
13   A.   I can't answer that as I sit here
14   right now.
15   Q.   How many ads were blocked or
16   restricted by Xandr for inappropriate content
17   during this timeframe?
18   A.   I can't answer that as I sit here
19   right now.
20   Q.   What comparative analysis did you
21   do to compare Google's rate of blocking
22   inappropriate content ads to competitors?
23   MS. MAUSER: Object to form, to
24   the extent you're characterizing his
25   report.

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1   THE WITNESS: As I said before,
2   there was no clear, consistent measure
3   of that data.
4   BY MR. FREEMAN:
5   Q.   So the answer is you didn't do
6   any comparative analysis, right?
7   A.   Because the data was not
8   available to me.
9   Q.   Moving to Figure L in Appendix C,
10   what is figure L?
11   A.   Subcategory titled
12   "misrepresentation."
13   Q.   What type of ads violated
14   Google's policy as it relates to
15   misrepresentation of an ad?
16   A.   I'm sorry, can you repeat the
17   question?
18   Q.   What type of ad violated Google's
19   policy as it relates to misrepresentation of an
20   ad?
21   A.   An ad that Google technologies
22   and/or professionals deemed a violation of their
23   misrepresentation policy.
24   Q.   Did you review the underlying
25   data as it supports Figure L?

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1   A.   I did not.
2   Q.   What did you do to confirm the
3   accuracy of those numbers?
4   A.   I did not.
5   Q.   You did not confirm the accuracy
6   of those numbers?
7   A.   Outside of pulling it from Google
8   and their publicly available domain, I did not
9   feel the need.
10   Q.   How was pulling it from Google
11   confirming the accuracy?
12   A.   The Google domain, pulling it
13   from Google's website.
14   Q.   How does pulling that information
15   from Google's domain confirm the accuracy of the
16   numbers?
17   A.   As I've said in the past, Google
18   is my client, is providing information publicly
19   available to the world via their public domain,
20   Google.com. This was pulled from an official
21   support site, policy site. I pulled the data, I
22   pulled the information and believed it to be as
23   accurate as possible.
24   Q.   How can you say you believe it to
25   be as accurate as possible if you did nothing to

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1   confirm the accuracy of the numbers?
2   MS. MAUSER: Object to form.
3   THE WITNESS: Because I have no
4   reason to doubt it. And, again,
5   consistent with what I said earlier, the
6   scope of my investigation, this is just
7   supporting document -- documentation to
8   demonstrate Google's efforts to ensure a
9   safe and secure experience for
10   consumers.
11   BY MR. FREEMAN:
12   Q.   Are you saying you have no reason
13   to doubt any information put out by Google on
14   Google's domain?
15   A.   I didn't say that.
16   MS. MAUSER: Object to form.
17   BY MR. FREEMAN:
18   Q.   So what makes -- what would make
19   you doubt information posted about Google by
20   Google on a Google domain?
21   A.   It depends on the circumstances.
22   Q.   What circumstances would make you
23   question it or doubt it?
24   MS. MAUSER: Object to form.
25   THE WITNESS: It would depend on

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1   the circumstances. But I can tell you
2   in this particular case, it wasn't going
3   to change my views, my opinions.
4   BY MR. FREEMAN:
5   Q.   The numbers of ads blocked
6   wouldn't change your opinion about how effective
7   Google is at blocking ads?
8   MS. MAUSER: Object to form,
9   mischaracterizes his answer.
10   THE WITNESS: What I'm saying is
11   that I provided this material to
12   demonstrate that Google has mechanisms
13   in place. A number of ads blocked is
14   going do go up and down; it is a cat and
15   mouse game. That's how security works,
16   and it's going to constantly evolve and
17   change. So you're asking me did I
18   verify the data in Figure I, J, K, L and
19   I'm assuming the others, and you're
20   going to get similar answers, that's not
21   how security works. Security is an
22   evolving threat.
23   And so for me to spend time
24   verifying and validating this data,
25   doesn't change my views in the sense

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1   that Google is making an effort. Again,
2   they're an innovator; they're a leader.
3   They're clearly taking steps to combat
4   this risk that their consumers -- their
5   viewers and their consumers may
6   encounter.
7   There is no silver bullet in this
8   game. There is no perfect. And based
9   on what I've seen, Google, compared to
10   their peers, they are leaders in the
11   space. So for me to sit down and spend
12   time validating this particular data, it
13   -- I'm not sure -- I'm not sure how you
14   think that would change things.
15   BY MR. FREEMAN:
16   Q.   How does the number of
17   inappropriate ads removed by Google from its
18   platform compare to the number of inappropriate
19   ads removed by publishers using header bidding?
20   MS. MAUSER: Object to form.
21   THE WITNESS: Excuse me?
22   BY MR. FREEMAN:
23   Q.   How does the amount of
24   inappropriate ads removed by Google during 2020
25   to 2022, how does that compare to the number of

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1   inappropriate ads removed by publishers who are
2   using header bidding?
3   MS. MAUSER: Object to form.
4   THE WITNESS: I can't answer that
5   as I sit here right now.
6   BY MR. FREEMAN:
7   Q.   Why can't you answer it?
8   A.   Because that's a very defined
9   dataset that you're asking about. And you're
10   asking about a single entity versus a cluster of
11   entities that are using two different
12   frameworks. And those frameworks have been
13   implemented many different ways. So, I mean,
14   you're asking an impossible question.
15   Q.   Why is it impossible to get data
16   from publishers about how many ads they removed
17   or blocked for being inappropriate content?
18   MS. MAUSER: Object to form.
19   THE WITNESS: Can you reask the
20   question?
21   BY MR. FREEMAN:
22   Q.   You said that I was asking an
23   impossible question, so my follow-up to that was
24   why is it impossible to get data from publishers
25   about how many ads they removed or blocked for

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1 being inappropriate content?
2   A.   That wasn't your exact question.
3 Your question was how many publishers who
4 leverage header bidding; did I hear that
5 correctly?
6   Q.   Correct.
7   How does the number of ads that
8 were blocked by Google during this timeframe
9 compare to the amount of ads removed by
10 publishers who are using header bidding --
11   MS. MAUSER: Object to form.
12 BY MR. FREEMAN:
13   Q.   -- during the same timeframe?
14   A.   And how does it compare? The
15 answer I have to that question is that is a
16 unique set of data that I do not have right in
17 front of me, so I can't answer that.
18   Q.   Have you seen any datasets
19 comparing Google's quantity of ads blocked or
20 restricted to any other company?
21   A.   I'm sure I have. There's a lot
22 of information out there.
23   Q.   Was that information cited in
24 your report?
25   A.   If I relied on it -- if it's

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1 referenced or I relied on it then, yes, it would
2 be cited in my report.
3   Q.   Why wouldn't you have relied on a
4 comparative dataset of Google compared to other
5 companies?
6   A.   Well, I discussed it earlier. I
7 think -- I don't believe that there's a single
8 source that actually receives the data and
9 interprets the data equally across platforms. I
10 think that the data is confusing. I think that
11 the way various companies collect the data and
12 report on the data varies.
13   So I didn't see anything publicly
14 available to me that I thought made -- made
15 sense or -- or I thought I could verify and sit
16 before you today and talk you through it.
17   Q.   Moving to Figure L in Appendix C,
18 what's Figure L?
19   A.   I'm sorry, of my report?
20   Q.   Yeah, that's correct.
21   A.   It is a subcategory "Bad Ads
22 Blocked or Removed by Google." The subcategory
23 is titled "Misrepresentation."
24   Q.   Then what is Figure M right below
25 it?

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1   A.   It's a subcategory of bad ads
2 blocked or removed by Google. The subcategory
3 is titled "Enabling Dishonest Behavior."
4   Q.   Did you review the underlying
5 data for Figure M?
6   A.   I did not.
7   Q.   What did you do to confirm the
8 accuracy of Figure M, the numbers that support
9 Figure M?
10   A.   Consistent with my earlier
11 questions of the other subcategories.
12   Q.   Do you know what -- the amount of
13 ads blocked or restricted for enabling dishonest
14 behavior by any other company?
15   A.   As I sit here right now, I can't
16 answer that.
17   Q.   Moving to Figure N on page 50.
18   A.   Yes.
19   Q.   What's Figure N?
20   A.   It's a subcategory of bad ads
21 blocked or removed by Google. The subcategory
22 is titled "Dangerous Products or Services."
23   Q.   Did you review the underlying
24 data that supports Figure N?
25   A.   Consistent with earlier, similar

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1 questions, I did not.
2   Q.   What did you do to confirm the
3 accuracy of the numbers that support Figure N?
4   A.   I did not.
5   Q.   Do you know how many ads or --
6 how many ads were blocked or restricted by any
7 other company for being dangerous products or
8 services?
9   A.   As I sit here right now, I can't
10 answer that.
11   Q.   What's Figure O?
12   A.   Figure O is another subcategory
13 of bad ads blocked or removed by Google. This
14 category is titled "Counterfeit Goods."
15   Q.   Did you review the underlying
16 data to support Figure O?
17   A.   I did not.
18   Q.   What you did do to confirm the
19 accuracy of the numbers?
20   A.   Consistent with earlier, similar
21 questions and answers, I did not.
22   Q.   Do you know how many ads were
23 blocked or restricted by any other company for
24 being counterfeit goods?
25   A.   As I sit here right now, I can't

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1 answer that.
2   Q.   I'd like you to go to Figure E,
3 that's actually on page 19 of your report.
4   A.   Okay. Okay.
5   Q.   What is Figure E?
6   A.   Let me read this.
7   (Witness reviews document.)
8   So this appears to be as stated
9 in paragraph 45, "The chart below depicts the
10 number of bad ads removed by Google from 2014 to
11 2022, based on its Ads Safety and Quality
12 Reports."
13   Q.   How does this chart -- or I
14 should say graph -- differ from the graphs that
15 are in Appendix C of your report?
16   A.   How does it differ?
17   Q.   Correct.
18   A.   I'm not sure it differs but
19 rather aggregates the data.
20   Q.   Well, it differs in years, right?
21   A.   Sure, it's longer.
22   Q.   All right. So Figure E is
23 from -- tracking from 2014 to 2022, right?
24   A.   Yes, I do see that.
25   Q.   Okay. And the appendix, the

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1 graphs in Appendix C were a more limited
2 timeframe of that from 2020 to 2022, right?
3   A.   That is correct.
4   Q.   In Figure E is kind of the
5 aggregate of the subcategory graphs as depicted
6 in Appendix C, right?
7   A.   A version of it, correct.
8   Q.   Okay. So what is the source of
9 information that made Figure E?
10   A.   It's footnoted.
11   Q.   Did you review the underlying
12 data that supports Figure E?
13   A.   Yes, I did.
14   Q.   I'm sorry?
15   A.   The underlying data that supports
16 Figure E.
17   Q.   Yeah.
18   A.   Meaning citation 46, did I review
19 that? Yes, of course.
20   Q.   Which citation in footnote 46 is
21 a dataset?
22   MS. MAUSER: Object to form.
23   THE WITNESS: I'm sorry, I think
24   we're talking about two different
25   things.

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1 BY MR. FREEMAN:
2   Q.   Okay. How would you -- how would
3 you define data?
4   A.   How would I define data? I mean,
5 that's a complicated question. I would say data
6 is on this sheet of paper.
7   Q.   Is the Trade Press article data?
8   A.   Yes.
9   Q.   Okay.
10   A.   So that's where I think we're
11 talking about two different things.
12   Q.   Did you review the underlying
13 data collected by Google that supports Figure E?
14   A.   You're referring to the
15 statistical data?
16   Q.   That's right.
17   A.   Yes -- no, I did not.
18   Q.   What did you do to confirm the
19 accuracy of the statistical data that supports
20 Figure E?
21   A.   Again, it's -- it's data either
22 provided to me from Google or publicly available
23 from the Google domain and their various
24 official support sites documenting how Google
25 operates. And so I reviewed that material,

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1 analyzed it, and that is my views here on page
2 19.
3   Q.   How many ads that violated
4 Google's policies and therefore would be deemed
5 a bad ad were not blocked that should have been
6 blocked by their policies?
7   A.   I can't answer that. I don't --
8 I don't even know if that question is
9 answerable.
10   Q.   You don't think -- strike that.
11   Do you know whether Google tries
12 to evaluate the effectiveness of their filters
13 in flagging bad ads?
14   A.   So are you asking me if I know
15 that?
16   Q.   Yeah, do you know that?
17   A.   I don't know that, but I have to
18 imagine they do.
19   Q.   Did you ask to review that type
20 of information?
21   A.   I did not.
22   Q.   Why didn't you ask to review that
23 type of information?
24   A.   I didn't think that was necessary
25 for me to reach my conclusions.

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```
 1        Q.     Don't you think that the rate at
 2  which they're catching bad ads would impact any
 3  of your conclusions in your report?
 4             MS. MAUSER:  Object to form.
 5             THE WITNESS:  You will have to
 6        reask the question.
 7  BY MR. FREEMAN:
 8        Q.     Does the rate at which Google
 9  catches and therefore restricts or block bad
10  ads, would that impact any of your conclusions
11  in your report?
12        A.     It would be a data point, but I
13  don't -- I mean, you're asking a question that I
14  don't think appreciates or takes into
15  consideration the industry.
16             As I said earlier, this is a
17  cat-and-mouse game.  And you asked me if
18  Google -- I forget how you put it -- refines
19  their filters to catch bad actors, and I said I
20  didn't know, but I have to imagine.  And so
21  you're asking me if I think the rate in which
22  they catch bad actors would sway my view.
23             It's a data point but looking at
24  the totality of data, no, it really wouldn't.
25  The fact of the matter is that Google has
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 1  demonstrated that they are a leader in this
 2  space, they are an innovator, they are working
 3  with colleagues across the industry to protect
 4  their consumers.  And so the refinement of
 5  filters and the success of those filters are not
 6  going to change my views because that is one
 7  single data point in hundreds, if not thousands,
 8  of data-points that you need to consider in
 9  totality in the security industry.
10             This is complicated material.
11  And one filter or the refinement of that filter
12  or the success or failure of that filter is not
13  going to define an organization in their
14  security posture in the efforts that they've
15  taken to protect consumers.
16        Q.     Does Google block or restrict bad
17  ads at a better rate than any other company?
18             MS. MAUSER:  Object to form.
19             THE WITNESS:  As I sit here right
20        now, I'm not sure I can answer that
21        question.  I can tell you --
22  BY MR. FREEMAN:
23        Q.     Why not?
24        A.     Why not?  Because I would need
25  data.  And you said "any other company," I would
```

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```
 1  need data to review that and talk through it
 2  with you.  It's a complicated subject.
 3             What I can tell you, though, is
 4  that Google has implemented, innovated and led
 5  the charge on creating and sharing technologies
 6  with the industry to help protect users.
 7        Q.     In going back to Figure E from
 8  2014 to 2022, how many bad ads were blocked or
 9  restricted by Amazon?
10        A.     As I sit here right now, I can't
11  answer that question.
12        Q.     What about Criteo?
13        A.     I can't answer that question.
14        Q.     Meta?
15        A.     As I sit here right now, I can't
16  answer that question.
17        Q.     The Trade Desk?
18        A.     As I sit here right now, I can't
19  answer that question.
20        Q.     OpenX?
21        A.     As I sit here right now, I can't
22  answer that question.
23        Q.     Magnite?
24        A.     As I sit here right now, I can't
25  answer that question.
```

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```
 1        Q.     PubMatic?
 2        A.     As I sit here right now, I can't
 3  answer that question.
 4        Q.     Index Exchange?
 5        A.     As I sit here right now, I can't
 6  answer that question.
 7        Q.     Xandr?
 8        A.     As I sit here right now, I can't
 9  answer that question.
10        Q.     Compared to publishers using
11  header bidding?
12             MS. MAUSER:  Object to form.
13             THE WITNESS:  As I sit here right
14        now, I can't answer that question.
15             I do want to highlight that I
16        think -- I do not think you can quantify
17        success or failure based on the number
18        of blocked ads.  It is a data point and
19        the totality of data that you have to
20        look at.
21  BY MR. FREEMAN:
22        Q.     But not just the success rate,
23  just the sheer quantity of ads that are blocked
24  by another company; is that not a data point?
25             MS. MAUSER:  Object to form.
```

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1   THE WITNESS: Can you reask the
2   question?
3 BY MR. FREEMAN:
4   Q.   Sure.
5   You said that detection rate was
6 one data point, right?
7   A.   Detection, blocking, these are
8 just single -- singular data-points. And you're
9 making such an emphasis on these data-points,
10 which, again, they're going to ebb and flow,
11 given the period of time that we look at, given
12 between now and a year from now.
13   As we sit here for this
14 deposition, there are hundreds, if not
15 thousands, of malicious actors innovating new
16 ways to defeat in-place technologies. These
17 filters you speak about, thousands of people are
18 sitting home finding ways to defeat them. This
19 is the security industry. And to view an
20 organization, success or failure, based on a
21 singular filter or failure of a filter, you're
22 just not looking at it from a security
23 perspective at all.
24   Q.   Moving to page 20, Figure F, what
25 is Figure F?

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1   A.   Figure F is the numerical data
2 stating bad ads stopped in 2022.
3   Q.   Did you create this chart?
4   A.   No, this is pulled from Google's.
5   Q.   Did you review the underlying
6 data that supports Figure F?
7   A.   The underlying statistical data,
8 no, I did not review.
9   Q.   What did you do to confirm its
10 accuracy?
11   A.   I did not, consistent with
12 similar earlier questions asked and answered.
13   Q.   Moving to page 21, Figure G, what
14 is Figure G?
15   A.   Figure G is a graph. This is a
16 representation of subcategories of Google
17 enforcement actions on publisher pages, the
18 number of pages Google has taken action against
19 in 2022.
20   Q.   What does it mean when it says
21 "Google took down the web page" or web pages?
22   A.   Where are you reading that?
23   Q.   In paragraph 48, you see that,
24 the second line towards the end it says "in
25 2022" you see that sentence? "Google," and then

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1 it says "took down 4.5 million web pages for
2 violating Google's policies against malware or
3 unwanted software."
4   And it goes on, but do you see
5 where I am?
6   A.   I do see that.
7   Q.   What does it mean when you put in
8 your report Google -- what I'm looking for, the
9 phrase "took down," what does that mean?
10   A.   They took efforts to remove them
11 from the internet.
12   Q.   What efforts did Google take to
13 remove them from the internet?
14   A.   You'd have to ask Google that.
15   Q.   How would one go about removing a
16 web page from the internet?
17   A.   Legal action, outside counsel,
18 internal legal department, cease and desist
19 letters. It's very common in the industry.
20   Q.   Did Google remove the websites
21 from any search results if they flagged it?
22   A.   As I sit here right now, I'm not
23 sure I can answer that. I would say I have to
24 imagine that they took steps to do that.
25   Q.   Did you review the underlying

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1 statistical data for Figure G?
2   A.   I did not review.
3   Q.   What did you do to confirm its
4 accuracy?
5   A.   Consistent with earlier, similar
6 questions asked and answered, I did not.
7   MR. FREEMAN: We've been going
8   about an hour. Want to take -- we can
9   go off the record.
10   THE VIDEOGRAPHER: Off the record
11   at 2:33. This ends media unit number
12   four.
13   (Brief recess.)
14   THE VIDEOGRAPHER: On the record
15   at 2:46. This begins media unit five in
16   the deposition of Anthony Ferrante.
17 BY MR. FREEMAN:
18   Q.   I would like to move on to the
19 topic of header bidding, okay.
20   Am I correct that header bidding
21 became widely adopted by publishers in 2014 and
22 2015?
23   A.   I think that's a safe assessment.
24 2014.
25   Q.   You -- I'm sorry, you have your

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```
1   report in front of you?
2        A.    I do.
3        Q.    Okay.  On page 28 is where you
4   start to begin talking about header bidding,
5   correct?
6        A.    Okay.  I'm on page 28.
7        Q.    And paragraph 66, the first
8   paragraph there, the second sentence says "It
9   became widely adopted by publishers in 2014 and
10  2015, before ads.txt was developed and became an
11  industry standard."
12            Do you see that?
13       A.    I do see that.
14       Q.    So is it correct, then, when you
15  are talking about it, you are talking about
16  header bidding in this context, that header
17  bidding became widely adopted by publishers in
18  2014 and 2015, right?
19       A.    Let me just read this to make
20  sure I'm understanding you correctly.  That is
21  correct.
22       Q.    Then in the next paragraph you
23  talk about header bidding being JavaScript code
24  that's placed on the header part of publisher's
25  website, also known as a header bidding wrapper.
```

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```
1        A.    I mean, the header bidding
2   wrappers were written in the web pages
3   themselves.  So when you say what companies, it
4   was code that was written by a programmer in the
5   page so --
6        Q.    And that code would take them to
7   where?
8        A.    It would connect them to SSPs.
9   It would connect them to advertisers.  That code
10  would allow them to facilitate the bidding
11  process to place bids on their ads.
12       Q.    So my question is is what
13  companies created the code to facilitate header
14  bidding?
15       A.    What companies created the header
16  bidding code?
17       Q.    Yeah.
18       A.    I don't know if there was a
19  single company that created it, or if it was --
20  just became an industry -- an industry adopted
21  code.
22       Q.    But certain companies then issued
23  a product to help publishers with header
24  bidding, right?
25       A.    Well, an entire industry was
```

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```
1            Do you see that?
2        A.    I do see that language.
3        Q.    So when heading bidding started
4   to become widely adopted in 2014 and 2015, what
5   header bidding wrappers were used mostly by
6   publishers?
7        A.    What header bidding wrappers?
8        Q.    Yeah.
9        A.    Header bidding wrappers written
10  by the various publishers on their sites.
11       Q.    What companies had products in
12  header bidding?
13       A.    What companies?
14       Q.    Yeah, what companies offered
15  header bidding?
16       A.    In 2014 and 2015, it was becoming
17  adopted by the players in the industry.
18       Q.    So what is a header bidding
19  wrapper?
20       A.    Header bidding wrapper is
21  JavaScript code that sits in the header of a web
22  page that facilitates the bids, the bidding
23  process for ad -- advertisements on that page.
24       Q.    What companies offered header
25  bidding wrappers to publishers in 2014 and 2015?
```

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```
1   built around online advertisement.
2        Q.    I know, but I want to talk about
3   the part of online advertisement of using header
4   bidding?
5        A.    Correct.
6        Q.    Were there certain companies that
7   had products to help publishers with header
8   bidding?
9        A.    So header bidding is -- is a
10  framework, okay.  How it was implemented -- so
11  it's a technology.  How that technology was
12  implemented varied across the board.  And so,
13  yes, did that framework plug into other players
14  in the industry, SSPs, DSPs, ad networks, sure,
15  yes.  But in the end that header bidding code
16  allowed the publisher, the website, to receive
17  bids for advertisement space and then place
18  advertisements on their page.
19       Q.    But do you know or can you list
20  for me any header bidding wrappers that were
21  used in 2014 and 2015?
22            MS. MAUSER:  Object to form.  Go
23       ahead.
24            THE WITNESS:  I'm not sure --
25       you're asking me -- header bidding is
```

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```
 1          code.  It is JavaScript written code.  I
 2          could sit down and write header bidding
 3          code.  Does that make it the Ferrante
 4          header bidding code?  Do you understand
 5          what I'm saying?  So when you say "what
 6          companies," I'm not sure I understand.
 7   BY MR. FREEMAN:
 8          Q.     Is header bidding different than
 9   header bidding wrapper?
10          A.     "Header bidding wrapper" is the
11   code.  "Header bidding" is the term used to
12   describe the framework and the process in which
13   it occurs.
14          Q.     Okay.  And you principally make
15   three points about header bidding in security
16   vulnerabilities about bad actors can exploit,
17   right?  You talk about; one, the inability to
18   prevent fraud amongst the noise -- that's a
19   phrase that you used, "noise" in quotes of
20   multiple calls; second, the lack of -- and then
21   the phrase you used is "guardrails" to protect
22   against malvertising; and third, you say -- you
23   talk about user and publisher data leakage, in
24   particular vulnerabilities of header bidding, do
25   I have that, in broad brushes?
```

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```
 1          A.     In broad brushes.  There are also
 2   others, but we can talk through them.
 3          Q.     Do you make any distinction in
 4   your analysis between client side and server
 5   side header bidding?
 6          A.     Client side or server side header
 7   bidding, do I make any distinction?
 8          Q.     Yeah.
 9          A.     I talk about header bidding and
10   how it -- I talk about header bidding in the
11   sense of telling a story about where it came
12   from and where it is today.
13          Q.     What is the difference between
14   client side header bidder and server side header
15   bidder?
16          A.     Client side header bidding is
17   when the entire process is facilitated through
18   the client, the web browser, the actual
19   consumers' machine.  As they sit in front of
20   their machine, the code is in the page that they
21   visit, and that code functions, makes the calls,
22   receives the returns, process the returns and
23   displays the ads.  That is client side header
24   bidding.
25          Q.     How does that differ from server
```

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```
 1   side?
 2          A.     Server side header bidding, which
 3   is an implementation of the header bidding
 4   framework.  And evolution the header bidding
 5   framework is when rather than that code
 6   executing in the browser, it is calling a
 7   server, connecting to that server and allowing
 8   the server to do the lion's share of the
 9   processing and the work and then returning
10   results.
11          Q.     One of the phrases you use is
12   kind of the distance between the advertisers and
13   the publishers and security vulnerabilities with
14   that; is that right?
15          A.     Yes.
16          Q.     When you talk about distance in
17   this context, what are you referring to?
18          A.     Can you point to my report of
19   where I reference that?
20          Q.     I'm just asking on a high level
21   of do you think there's any different security
22   concerns about the distance between advertisers
23   and publishers?
24          A.     Well, I think I know what you're
25   referring to, and I just want to confirm it, so
```

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```
 1   I want to give you the best possible answer
 2   here.  So if you could point to the paragraph.
 3          Q.     Do you think there's any
 4   difference in terms of the distance between
 5   advertisers and publishers with those who are
 6   doing client side header bidding as opposed to
 7   those who are doing the server side client
 8   bidding?
 9          A.     Okay, can you give me a second?
10          (Witness reviews document.)
11          Do you want to reask your
12   question, please?
13          Q.     Do you think there's any
14   difference in terms of the distance between
15   advertisers and publishers with those who use
16   client side header bidding as opposed to those
17   who use server side client bidding?
18          MS. MAUSER:  Object to form.
19          THE WITNESS:  So do I think
20      there's distance?
21   BY MR. FREEMAN:
22          Q.     That's right.
23          A.     Between those who facilitate
24   client side and those who facilitate server
25   side?
```

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```
1          Q.      Correct.
2          A.      I really don't understand the
3    question.
4          Q.      Okay.  I want to talk to you
5    about data leakage.
6          A.      Okay.
7          Q.      All right.  And in particular
8    paragraph 75, which is on page 30.  You say it
9    at the very beginning of paragraph 75, quote,
10   "The emergence of header bidding introduced
11   various security concerns regarding data leakage
12   as a result of the simultaneous manner in which
13   calls are sent to bidder."
14               Do you see that?
15         A.      I do see that.
16         Q.      When you use the word "concerns"
17   about data leakage with header bidding, are you
18   talking about data leakage that did occur or
19   that may occur?
20         A.      I'm talking about data leakage
21   that did occur.
22         Q.      Did you review any statistical
23   data that supports your claim that data leakage
24   occurred as a result of simultaneous manner in
25   which calls are sent to bidders in header
```

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```
1    bidding?
2          A.      What is your question?  Can you
3    repeat that, please?
4          Q.      Did you review any statistical
5    data that supports your claim that data leakage
6    occurred as a result of -- of the simultaneous
7    manner in which calls are sent to bidders in
8    header bidding?
9          A.      I didn't need to review any
10   statistical data.
11         Q.      Why don't you need to review any
12   statistical data?
13         A.      Because I field tested it and saw
14   the data.
15         Q.      Where is your field testing
16   results in Appendix B of which you relied on?
17         A.      I don't have them.  Again, as we
18   spoke earlier, of course I looked at code.  And
19   I told you we field tested, and we looked at
20   this data.  This is one of the security concerns
21   that I cite, is that when the implementation of
22   header bidding, when bids are solicited, those
23   bids are solicited with personal data of users,
24   the sites that they're on, the previous pages
25   that they visited.
```

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```
1               In addition to that, my regularly
2    conducted security work that I do every single
3    day in the industry today, I see the same exact
4    data.
5          Q.      When did you do your field
6    testing about data leakage in header bidding?
7          A.      Through the course of this
8    investigation.
9          Q.      What investigation?
10         A.      The investigation I conducted
11   which framed the basis of this report.
12         Q.      Walk me through what steps you
13   did in your field testing to support the claim
14   that data leakage occurred with header bidding?
15         A.      We have an implementation of
16   header bidding, we visited the site, we watched
17   the code function, we watched the parameters
18   past, and we looked at them.  We saw browser
19   information, IP address, previously visited
20   site.  I mean, sensitive user data that, again,
21   that's specific to this particular
22   investigation.
23               But as I said earlier, me and my
24   team are doing this every single day in other
25   cases where these sorts of questions are being
```

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```
1    called in various platforms, in various types of
2    data, various types of implementation.  Excuse
3    me.
4          Q.      How many different websites did
5    you visit to watch the code function?
6          A.      I only needed one to see it.
7    Header bidding is a framework, a framework that
8    as we stated was adopted 2014, 2015.  There are
9    significant security risks in header bidding.
10   We watched them.
11               There is the ability to conduct a
12   man-in-the-middle attack.  If you're sitting in
13   Starbucks and you're sniffing traffic, you can
14   siphon personal data from other users on that
15   network.
16               If you can get into the bidding
17   process, you can gather personalized, sensitive
18   data of users visiting the site just by hiding
19   in plain site.  Literally placing yourself in
20   the bid process with no intention of bidding,
21   you're still able to collect that data.
22               You're able to buy access to
23   users machines.  You are able to play a bid of,
24   let's say, $25, which no one would compare to
25   you, and you would get the winning bid, which
```

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```
 1   then would give you an opportunity to launch
 2   malware on someone's machine that would give
 3   you -- essentially, you would buy access to
 4   consumers' machines.
 5            You would be able to collect data
 6   on your competitors because in addition to you
 7   being part of the bid process, you see what
 8   others bid.  I mean, those are four significant
 9   security concerns that I reference in my report
10   that header bidding introduced.
11       Q.    Where did you get the code to
12   insert into the website?
13       A.    It's publicly available code.
14       Q.    Where?
15       A.    I'd have to go back and check.
16       Q.    Then you relied on these field
17   test results to support your claim that data
18   leakage occurs as a result of the simultaneous
19   manner in which calls are sent to bidders?
20       A.    It's not a secret; it's very
21   well-documented.  What I wanted to do was
22   actually see it in play like we do every single
23   day.  We do this with all of our work, with all
24   of our technical investigations.  Of course we
25   want to see it in real time and --
```

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```
 1       Q.    So --
 2       A.    I'm sorry to interrupt.  And it's
 3   very well-documented; there are lots of articles
 4   out there.  I mean, it is actually so
 5   well-documented that that's where you can read
 6   the story about how header bidding has evolved
 7   to what it is today, which is a more secure
 8   version of the earlier version -- you referred
 9   to it earlier -- if done correctly, server side
10   header bidding.  But that's not -- I mean, that
11   is just such an evolution of it to where it is
12   today.
13       Q.    Just want to make sure I get the
14   time right.
15            After you were retained by Google
16   in this particular case, you ran your own field
17   test to determine how much data leakage there
18   was using the header bidding; is that right?
19            MS. MAUSER:  Object to form.
20            THE WITNESS:  So through the
21       course of this investigation, we found
22       lots of documentation highlighting the
23       risks.  Given the way we operate in the
24       industry and how we operate and conduct
25       these investigations, yes, of course, we
```

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```
 1       wanted to field test it, we wanted to
 2       see it.  This is what we do every single
 3       day.  We are an investigative -
 4       technical investigative firm.  Of course
 5       we're going to look at this.  This
 6       wasn't hard to do.
 7   BY MR. FREEMAN:
 8       Q.    Where are your field test results
 9   cited in your report?
10       A.    I mean, the results are in the
11   report.  You see it.  I mean, when you say
12   "field test results," you're talking about
13   looking at a screen.
14       Q.    Where do you say that you field
15   tested this in your report?
16       A.    You know, I'm not sure but --
17       Q.    Take your time.  Look at the
18   report in front of you and tell me where it says
19   that you field tested header bidding?
20       A.    This is what we do through the
21   course of the investigation.  We read, we
22   digest -- I talked about this earlier, how did
23   we get here?  We digested all the documents, and
24   we wear -- and we took steps to verify the
25   information that we learned.  I mean, we just
```

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```
 1   talked extensively about statistical data and
 2   whether or not we validated it.  Of course we're
 3   going to validate these claims.
 4       Q.    How would anyone know reading
 5   your report that you conducted a field test
 6   about header bidding?
 7       A.    I'm not sure I understand the
 8   question.  I mean, my report is my report.
 9   There's lots of data in my report.
10       Q.    But one of the things that you
11   said supported the claim that you said in
12   paragraph 75 was that you did your own
13   independent field test, right?
14       A.    Of course.
15       Q.    What I'm asking is where is the
16   fact that you conducted a field test in the
17   report?
18       A.    As I said earlier, I mean, it's
19   what we do through the course of our
20   investigations.  It is review, verify.
21            What sort of security researcher
22   would not want to look at this and be able to
23   verify it before they sign their name and raise
24   their right hand and swear to it?
25       Q.    Why didn't you include it in your
```

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1 report?
2   A.   This -- this is the -- I mean,
3 this is important. And so I don't understand
4 why I wouldn't verify it.
5   Q.   Why wouldn't you include it in
6 your report if it supports one of the arguments
7 that you're making?
8   A.   But what do you want me to
9 include? That's what I don't understand. I
10 mean, this is -- this is like seconds in
11 reviewing data on a screen as it traverses the
12 wire.
13   Q.   Do you document that in any sort
14 of way?
15   A.   Do we document it?
16   Q.   Yeah, the results of your field
17 test?
18   A.   I mean, we did in the report, and
19 we cite our material.
20   Q.   Aside from the report, do you
21 document it in any fashion?
22   A.   I mean, of course we document our
23 stuff.
24   Q.   So if the results of the field
25 test were relied upon, why is it not in your

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1 Appendix B?
2   MS. MAUSER: Object to form.
3   THE WITNESS: I think -- I think
4   you're thinking this was like a massive
5   chemistry experiment with control groups
6   and noncontrol groups or whatever. I
7   mean, this was -- this was sniffing the
8   wire for a short period of time as a
9   user visited a website and just watching
10   the data traverse. It's seconds. I
11   mean, that's the point of header bidding
12   being so insecure and why the need for
13   it to evolve was so critical.
14 BY MR. FREEMAN:
15   Q.   And you did this one time?
16   A.   That's all we needed to do.
17   Q.   And answer to that is yes, one
18 time?
19   A.   That's all we needed to do, is
20 one time.
21   Q.   You said that it's
22 well-documented, the fact that data leakage is a
23 result of header bidding, right?
24   A.   Yes.
25   Q.   What academic peer-reviewed

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1 journal did you cite to support that in your
2 report?
3   A.   I'm not sure. Maybe we can look
4 in my cited sources, but it's no secret. It's
5 well-documented. That is why we took the steps
6 to do a quick field test.
7   Q.   Did you do any sort of
8 comparative analysis of the amount of data
9 leakage that occurs on header bidding that
10 occurs through a bid through AdX?
11   A.   So I can't recall the exact
12 players we used for the field test. But, again,
13 I mean, separate from the field test it is very
14 well-documented.
15   And, again, I would just
16 highlight that header bidding is a framework
17 that is implemented a myriad of different ways.
18 I mean, I would be surprised if there were two
19 identical instances of header bidding
20 implemented the same exact way at two different
21 companies.
22   Q.   But how does the amount of data
23 leakage from the use of header bidding compare
24 to the data leakage from a bid request going
25 through AdX?

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1   A.   Well, again, I'm not sure how AdX
2 has their header bidding implementation
3 configured. But I can tell you -- I mean, let's
4 take it to the framework level. Header bidding
5 is code that sits on the browser. When called
6 it has the send data about that user so it can
7 conduct an accurate bidding process. Those
8 bidders get access to that data. They're
9 sitting there, part of the bidding process,
10 seeing that data, collecting that data. And
11 because it is done the way it is done, if you
12 are on the network sniffing data packets, you
13 are going to see that data because it is sent in
14 clear text.
15   Again, also, if you are hiding in
16 plain site and have no intention of bidding, you
17 can collect that data.
18   If you are the highest bidder,
19 you can buy access to users' machines. You can
20 also collect competitive intel on your peers in
21 that space.
22   Q.   So one of the articles that you
23 cited in footnote 80, right, is an article title
24 "Unraveling Header Bidding's Problems with User
25 Data," right?

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```
 1        A.    Yes.
 2              MS. MAUSER:  Let me show you
 3        what's been marked as Ferrante-Lit
 4        Exhibit 4.
 5              (Document marked for
 6        identification as Ferrante-Lit
 7        Deposition Exhibit No. 4.)
 8   BY MR. FREEMAN:
 9        Q.    Is Ferrante-Lit Exhibit 4 the
10   same article that you were citing in paragraph
11   75?
12        A.    I believe so.
13        Q.    And in the first -- the third
14   paragraph on the first page of the article, it
15   says, quote, "There are some real security
16   concerns about header bidding that aren't being
17   talked about," end quote.
18              Do you see that?
19        A.    I do see that.
20        Q.    And the source of that
21   information, though, is that "Ad fraud
22   researcher requesting anonymity."
23              Do you see that?
24        A.    I do see that.
25        Q.    So we have no idea who that
```

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```
 1   person is, right?
 2        A.    Sure.
 3        Q.    Do you see then on page 4 of the
 4   document, that below would be 4 out of 9,
 5   talking about same?
 6        A.    I see it, yes.
 7        Q.    At the very bottom of the page,
 8   it says "While sources did not share any
 9   first-hand experiences, data leaking can be
10   problematic for both publishers and users."
11              Is that right?
12        A.    That's what it says, yes.
13        Q.    So in this article, there is no
14   firsthand knowledge of actual data leakage being
15   a problem as a result of header bidding, right?
16        A.    I don't know if I agree with that
17   statement.
18        Q.    Why don't you agree with that
19   statement?
20        A.    Because it says "sources did not
21   share."  Doesn't say they didn't have knowledge.
22        Q.    Okay.  There's nothing within the
23   article that you cite that supports that there
24   is firsthand knowledge of data leakage as a
25   result of header bidding, right?
```

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```
 1        A.    I'm sorry, can you repeat that
 2   statement?
 3        Q.    There's nothing within this
 4   article that you cite that supports that there
 5   is firsthand knowledge of data leakage as a
 6   result of header bidding, right?
 7        A.    No, I disagree with that
 8   statement.
 9        Q.    Why do you disagree with that?
10        A.    Because clearly there's knowledge
11   of it; there's an article written about it.
12   It's just no one wants to -- you've got an
13   anonymous source on page 1, and no one wants to
14   raise their hand and state it.
15        Q.    So how do you know it's accurate?
16        A.    The article?
17        Q.    Yeah.
18        A.    It's an article written about it.
19   I mean, it's got data that is -- like I said, it
20   is well-documented across the internet.
21        Q.    Then why wouldn't you cite those
22   documents as opposed to one that has the ad
23   fraud researchers requesting anonymity and
24   someone who doesn't want to share any firsthand
25   experience?
```

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```
 1        A.    You know, I can't answer that as
 2   I sit here right now, but I'm sure there's a
 3   reason.
 4        Q.    As you sit here today, can you
 5   provide me a specific example of data leakage
 6   that occurred in the real world that resulted
 7   from the simultaneous manner in which calls are
 8   sent to bidders using header bidding?
 9        A.    I'm sorry, can you reask the
10   question?
11        Q.    Sure.
12              Can you provide me a specific
13   example, other than your field test, where data
14   leakage occurred as a result of a -- of the
15   simultaneous manner in which calls are sent to
16   bidders when using header bidding?
17        A.    Can I give you a single
18   example --
19        Q.    Yeah.
20        A.    -- outside of my field test of a
21   very well-documented security gap in header
22   bidding?
23        Q.    That's right.
24        A.    I mean, I could talk to you about
25   it for hours.
```

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1   Q.   That's not my question.
2   A.   It happens all the time. Packet
3 sniffing on local networks happens all the time.
4 It is how this stuff is conducted. It is how
5 data on users is collected. I mean, this is
6 happening -- data leakage, okay, through header
7 bidding, it's happening all the time. So you're
8 asking me to give you a specific example? I
9 mean, I could talk to you about dozens of cases
10 I worked in the FBI. I could talk to you about
11 cases I'm still working today where this data is
12 available because of improperly -- improperly
13 configured websites. I mean, this is a common
14 risk in the industry.
15   Q.   You had dozens of cases you
16 worked on at the FBI that was data leakage in
17 regards to header bidding?
18   A.   Data leakage with respect to
19 websites.
20   Q.   Okay.
21   A.   And user data.
22   Q.   That's not what I'm talking
23 about.
24   If it's so well-documented, why
25 can't you provide me a single example, other

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1 than your field test, where data leakage
2 occurred as a result of the simultaneous manner
3 in which calls are sent to bidders?
4   MS. MAUSER: Object to form.
5   THE WITNESS: I think I've
6   answered the question.
7 BY MR. FREEMAN:
8   Q.   What's the example then, repeat
9 it then?
10   A.   There are -- I've worked many
11 cases where user data leaks from a website.
12   Q.   But as a result of the
13 simultaneous manner in which calls are sent to
14 bidders in header bidding? That's my question.
15   A.   Okay. I'm not sure if I can
16 answer that right now.
17   Q.   So as you sit here today, you
18 can't provide me a single example, other than
19 your field test, where data leakage occurred as
20 a result of the simultaneous manner in which
21 calls are sent to bidders in header bidding?
22   MS. MAUSER: Object to form.
23   THE WITNESS: As I sit here
24   today, I cannot reference a case right
25   now.

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1 BY MR. FREEMAN:
2   Q.   I want to move on to your topic
3 about the lack of guardrails within header
4 bidding.
5   What do you mean when you use the
6 phrase "guardrails"?
7   Sir, I'm not asking about the
8 exhibit anymore.
9   A.   I know. I'm still reading it,
10 though.
11   Q.   I have a specific amount of time
12 I'm allotted.
13   I'm asking you when you use the
14 phrase "guardrails," what do you mean by that
15 phrase?
16   A.   I mean when you -- in the context
17 of my report, I mean when you put revenue over
18 safety, and you do not take steps to vet or
19 understand your customers. And so you introduce
20 a lot of players, some nefarious players into
21 the ecosystem.
22   Q.   In particular paragraph 73 of
23 your report, which is on page 29, you say,
24 quote, "With header bidding, there was a lack of
25 guardrails and standards for entry and

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1 participation, therefore making it easier for
2 threat actors, whose tactics include
3 malvertising, to enter and participate in header
4 bidding options."
5   Do you see that?
6   A.   I do see that.
7   Q.   What peer-reviewed research do
8 you have to support that claim?
9   A.   I'm wondering if it's cited. I
10 mean, it's very well-documented.
11   Q.   Then why didn't you cite the very
12 well-documented research to support that claim
13 in your -- in your report?
14   A.   I'm not sure I didn't. I mean,
15 going back to the Digiday piece.
16   Q.   Are you saying that you did cite
17 to a peer-reviewed journal that supports that
18 claim?
19   A.   I'm sorry what was your question?
20   Q.   Are you saying you did cite to a
21 peer-reviewed journal that supports that claim?
22   A.   A peer-reviewed journal?
23   Q.   Yeah.
24   A.   I don't think I cited a
25 peer-reviewed journal, but it's very

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1 well-documented.
2   Q.   If it's very well-documented, why
3 didn't you cite to any document after making
4 that statement in your report?
5   A.   I believe I did.
6   Q.   Okay. Let's go back to it.
7   A.   I mean --
8   Q.   Paragraph 73, the statement "With
9 header bidding, there was a lack of guardrails
10 and standards for entry and participation,
11 therefore making it easier for threat actors,
12 whose tactics include malvertising, to enter and
13 participate in header bidding auctions."
14   Do you see that?
15   A.   Mm-hmm.
16   Q.   Do you have any footnote for that
17 particular statement?
18   A.   There is no footnote for that
19 statement.
20   Q.   So what are you relying on to
21 make that statement?
22   A.   My professional experience,
23 totality of data that I reviewed, the fact that
24 the statistics, further in the paragraph,
25 highlight that by implementing vetting program

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1 actually produced positive results and that
2 there are multiple articles that you can find
3 documenting how -- when the network put revenue
4 over quality, it generated -- it created risk.
5   Q.   But the statistic that you cite
6 in that paragraph, in paragraph 73, is from
7 2013, right?
8   A.   Later in the paragraph you're
9 referring to "In 2013 Google's research noted
10 that spam click rate through AWBid varied
11 anywhere from from ten to 70%, while AdX
12 remained at seven to 8%," is that what you are
13 referring to?
14   Q.   Well, you just said that based
15 off of my professional experience, totality of
16 data that I reviewed and the statistics I say
17 later in the paragraph, are those the statistics
18 you are talking about?
19   MS. MAUSER: Object to form,
20   mischaracterizes his testimony.
21   THE WITNESS: That's what I said.
22 BY MR. FREEMAN:
23   Q.   You said statistics further in
24 the paragraph highlight that by implementing the
25 vetting program actually produced positive

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1 results?
2   A.   Correct.
3   Q.   And the statistics that you cite
4 in paragraph 73 is from 2013, right?
5   A.   That is correct.
6   Q.   And that year, then, is before
7 header bidding was widely adopted by publishers,
8 right?
9   A.   That is.
10   Q.   So the statistic analysis that
11 you have cited in paragraph 73 has nothing to do
12 with header bidding?
13   A.   It has to do with guardrails,
14 vetting.
15   Q.   But not guardrails in the sense
16 of header bidding, right?
17   A.   Guardrails with respect to just
18 entry into the bidding process.
19   Q.   But you would agree that those
20 statistics from 2013 are not within the context
21 of header bidding?
22   A.   It's guardrails with respect to
23 entry into the bidding process and the lack of
24 guardrails introduced an uptick in malvertising,
25 which is what -- is the security risk that we're

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1 trying to mitigate.
2   Q.   But those statistics came from
3 research before header bidding was widely
4 adopted?
5   A.   We are speaking about guardrails,
6 though. Header bidding is the framework, and it
7 is the implementation of that framework. And
8 there are other data-points or other factors
9 that you can implement with the header bidding
10 framework. And in this case I'm referring to
11 guardrails, guardrails in which entry into the
12 bidding process is vetted. There are others
13 that were adopted later on due to the evolution
14 of the technologies.
15   What I'm highlighting here is
16 that in 2013, Google did research and allowed
17 nonvetted players to participate in their bids.
18 And the click rate through AWBid varied from 10
19 to 20%, while AdX remained from seven to 8%
20 highlighting that the guardrails helped. And
21 that is another parameter, another data point
22 that should be factored.
23   Q.   But, again, guardrails, not in
24 the context of header bidding, right?
25   A.   Guardrails in the context of the

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1 bidding process, digital advertising ecosystem.
2 There's a lot involved, and this is -- this is
3 an important data point that speaks to it.
4   Q.   Did you review the document, the
5 internal Google document that cites the research
6 finding ten to 70% of a spam click rate?
7   A.   Seventy-nine?
8   Q.   That's correct.
9   A.   Yeah, I'm sure I did if I
10 footnoted it.
11   Q.   And did you see the comment that
12 says that the ten to 70%, that this was before
13 blacklisting was applied, and 70% end was before
14 blacklisting. Its 10% or so nowadays?
15   A.   Do you want to show me the
16 document?
17   Q.   Do you remember seeing that?
18   A.   Again, I mean, we can keep going
19 back to this memory test. I'm sure I saw it,
20 and I'm sure I read it, but we can have a better
21 discussion if you show it to me.
22   MR. FREEMAN: Okay. I'll mark
23 Ferrante-Lit Exhibit 5.
24   (Document marked for
25   identification as Ferrante-Lit

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1   Deposition Exhibit No. 5.)
2   THE WITNESS: I do remember
3   seeing this document.
4 BY MR. FREEMAN:
5   Q.   Just so we're clear. So on the
6 second page of the document, which at the bottom
7 ends with the Bates number 469, there's a chart;
8 is that right?
9   A.   I do see that chart.
10   Q.   Okay. And is it this chart,
11 particularly the AWBid column of the chart, the
12 basis for the statistics you placed in your
13 report?
14   A.   You know, I can't say for certain
15 if this is the exact basis of the statistic put
16 in my report.
17   Q.   Where else would those statistics
18 have come from?
19   A.   As I sit here right now, I can't
20 say. But I just want to be mindful that I'm not
21 exactly sure that this exact report is the basis
22 of it.
23   Q.   It's a document that you cited,
24 right?
25   A.   That is true.

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1   Q.   So is it correct to infer that
2 the document you cited to support those
3 statistics was actually the document you relied
4 on to put statistics in the report?
5   A.   Sure.
6   Q.   Okay. And then I'd asked you
7 about it without the document, but now do you
8 see that there are comments kind of attached to
9 the ten to 70% in the spam click rate column?
10   Do you see that?
11   A.   I do see that.
12   Q.   And the first comment says "Is
13 this overall before any blacklisting was
14 applied?" With the second one being "70% end
15 was before the blacklisting. 10% or so is
16 nowadays."
17   Is that right?
18   A.   That's what it says.
19   Q.   What's your understanding of what
20 blacklisting is?
21   A.   Blacklisting is when you create a
22 list of indicators that are blocked.
23   Q.   And publishers can create
24 blacklisting lists even when they're using
25 header bidding?

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1   A.   Publishers can use blacklisting?
2 I mean publishers have tools available to them
3 to blacklist external sources from touching
4 their sites, yes.
5   Q.   So is it fair to say that this
6 document that you cited says "The spam click
7 rate for AWBid at the time this document was
8 created was more like 10%," right?
9   A.   You know, I can't speak to what
10 that comment means exactly but I can speak as a
11 security professional that blacklisting is not
12 as foolproof as one might think it is.
13   Q.   Well, did you try to review any
14 of the underlying statistical analysis to
15 support these numbers before putting it in your
16 report?
17   A.   I did not.
18   Q.   Did you see any Google research
19 after 2013 showing the spam click rate for
20 AWBid?
21   A.   I'm sorry, can you repeat the
22 question?
23   Q.   Yeah. The document that we've
24 been looking at and cited in your report is from
25 2013, right?

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1   A.   That is correct.
2   Q.   And it's about Google's research
3 showing spam click rate through AWBid in 2013,
4 right?
5   A.   That is correct.
6   Q.   My question is: did you see any
7 Google research after 2013 showing the spam
8 click rate for AWBid?
9   A.   I did not.
10   Q.   What is your understanding of
11 what AWBid is?
12   A.   AWBid was a pilot where they --
13 the precursor to some of the technologies that
14 have now evolved into open bidding.
15   Q.   Did you see any research after
16 2013 showing the spasm click rate for AdX?
17   A.   I can't recall as I sit here
18 right now.
19   Q.   If you would have seen something
20 like that, would that have been something you
21 would have included in your report?
22   A.   Possibly.
23   Q.   So what type of statistical
24 comparison did you do about the spam click rate
25 for header bidding as that compares to the spam

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1 click rate for AdX?
2   A.   I'm sorry, can you repeat the
3 question?
4   Q.   Did you compare the spam click
5 rate for header bidding to the spam click rate
6 for AdX?
7   A.   I did not.
8   Q.   I want to move, then, to the part
9 where you discuss noise in header bidding.
10   A.   Okay.
11   Q.   And specifically starting on
12 paragraph 70 on page 28, you cite to the IAB
13 Tech Lab Chief.
14   Do you see that in the second to
15 last sentence?
16   A.   I do.
17   Q.   With the tech lab chief saying,
18 quote, "Header bidding led to publishers being
19 more --" going on to the next page --
20 "promiscuous in their demand partnerships and
21 more willing to turn on demand partners, which
22 made it easier for bad actors to hide amongst
23 all the activity."
24   Do you see that?
25   A.   I do see that.

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1   Q.   And then you cite to a particular
2 article which has that quote, right?
3   A.   Yes.
4   MS. MAUSER: So I'm going to show
5 you what's been marked as Ferrante-Lit
6 Exhibit -- this is 6, right? Six.
7   THE WITNESS: Correct.
8   (Document marked for
9 identification as Ferrante-Lit
10 Deposition Exhibit No. 6.)
11   THE WITNESS: And Michael,
12 when -- like a three-minute warning,
13 five-minute warning?
14   MR. FREEMAN: Let's do it now
15 before I -- we can go off the record.
16   THE VIDEOGRAPHER: Off the record
17 3:38.
18   (Brief recess.)
19   THE VIDEOGRAPHER: On the record
20 at 3:56.
21 BY MR. FREEMAN:
22   Q.   During our last session you had
23 talked about a field test that you did about
24 header bidding in data leakage, right?
25   A.   Correct.

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1   Q.   I just want to a little bit put
2 some more color on that in terms of what website
3 did you visit to conduct this field test?
4   A.   So you have to appreciate, again,
5 this is work that I do every single day in
6 private practice. And as I told you earlier, I
7 was literally born and raised working in this
8 space, programming, the internet, security
9 networking. So we talk about header bidding,
10 and when you take bits -- you take the pieces
11 that make up header bidding, and you take them
12 apart, you understand the technologies involved,
13 okay. And so it's very easy to -- to read about
14 it and to understand it as a technology expert.
15 Again, this is what I do every single day.
16   And so when it comes to
17 conducting a field test, it's as simple as okay,
18 we have a website, we are -- user data is being
19 collected as the user visits the website, okay,
20 and how is that data being transferred? Oh,
21 header bidding used, clear text communications.
22   Clear text communications is not
23 protected and is very much susceptible to
24 eavesdrop collection, or as we said before, data
25 leakage. So -- so it's very easy for me and the

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 1   team to do this as we conducted our
 2   investigative work.
 3        Q.    I want, though, to understand
 4   overall, but specifically for the field test
 5   that you had previously talked about in this
 6   case, what website did you go to to conduct it?
 7        A.    You know, as I sit here right
 8   now, I don't recall.  But I can tell you that it
 9   was an implementation of header bidding in which
10   the security gaps were present.
11             And, again, those security gaps
12   are nothing new to me based on my experience in
13   private practice, my time in the government, and
14   they're not new concepts.  I mean, that's
15   something important to know.  These security
16   gaps that existed in header bidding were not new
17   concepts.  I mean, candidly that's why they've
18   expired or been retired, and the industry has
19   evolved to newer, more enhanced, more secure
20   protocols.
21             So as I sit before you as an
22   expert in this case, I'm not telling you
23   anything unique or novel for the industry.  This
24   is well known and well-documented.  But I, of
25   course, in preparation in conducting this work,
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 1   technologies for the U.S. government, going into
 2   private practice and aiding organizations as
 3   they are either exploited by malicious actors
 4   themselves, or the U.S. government is hammering
 5   them with some sort of regulatory action because
 6   they didn't do it correctly the first time.
 7             I built an entire career on this
 8   exact subject matter.  So just because an
 9   anonymous source was cited in Digiday, doesn't
10   mean that it's not true.  I'm telling you as
11   your expert this is true.  Clear text
12   communications, for example, is susceptible to
13   eavesdropping.  Sniffing packets on a wire is
14   putting user data at risk.  Sending user data to
15   potential bidders and looking at it
16   holistically, some of those bidders may be
17   hiding in plain site, not interested in placing
18   a single bid can still collect that data.  That
19   is risk that was introduced by header bidding.
20             I can cite work I've done in
21   private practice where a big tech company was
22   providing lots of data to their developers.  And
23   a lot of that data was collected and misused.
24   That big tech company got in a lot of trouble by
25   the U.S. government.  And in this case looking
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 1   I wanted to see it.
 2        Q.    You said now a few times -- let's
 3   talk specifically about data leakage in header
 4   bidding that is well-documented.
 5             Where are you referring to data
 6   leakage being reported in header bidding?
 7        A.    I'm telling you as the expert in
 8   this case the technologies implemented, clear
 9   text communication, it is well-documented
10   throughout the internet.  Everybody knows that
11   clear text communications are easily susceptible
12   to eavesdrop collection, sniffing packets on the
13   wire.  It is why the credit card industry moved
14   to encrypted communications.  I mean, it's very
15   well-documented.
16             What I've done in my report, and
17   we've gone back and forth on this, is I've cited
18   some articles to just highlight that it's very
19   well talked about by laypeople, okay, we're
20   talking VP of programmatic advertising in the
21   Digiday report, okay.
22             I'm sitting here before you as a
23   technical expert, someone who has spent their
24   entire career working in this space,
25   investigating crimes, exploiting these very
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 1   at the header bidding technologies, I see
 2   parallels.  And for me to be sitting before you
 3   today as an expert for Google and comparing
 4   header bidding to open bidding, I mean, there
 5   have just been dramatic security enhancements
 6   that have actually been adopted by the industry
 7   and are widely used today.
 8        Q.    Yeah, there's a lot to unpack
 9   there.
10             So when you say -- getting back
11   to it's been well-documented that there's data
12   leakage with the use of header bidding, are you
13   aware of a peer-reviewed academic journal that
14   concludes that?
15        A.    I don't need one.  It's well
16   known that clear text communications are
17   susceptible to collection.
18        Q.    Is there --
19        A.    Header bidding utilizes clear
20   text communication in some instances.
21        Q.    Is there a peer-reviewed academic
22   journal that says clear text communications is
23   susceptible to collection?
24        A.    Of course there are.
25        Q.    What are they?
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1   A.   There are thousands. It's
2 well-documented. Clear text communications on
3 the internet are absolutely susceptible to
4 communication.
5   Q.   Can you name me one of the
6 thousands?
7   A.   Oh, that's -- that's an unfair
8 question. That's like you asking -- that's an
9 unfair question, and you know it is.
10   Q.   Can you name one of them, one of
11 the thousands of well-documented peer-reviewed
12 academic journals that says clear text
13 communication is susceptible to collection?
14   A.   I -- Triply, I'm sure, has
15 dozens, if not hundreds, of peer-reviewed
16 academic articles on this. You are talking
17 about a concept on the internet that has existed
18 for what, 25, 30 years. Of course it's
19 well-documented that clear text communication is
20 susceptible to eavesdropping. Why do you think
21 the credit card industry moved to encrypted
22 communications? Why do you think the U.S.
23 government uses encrypted communications to
24 communicate sensitive data? Because clear text
25 communication is susceptible to collection and

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1 eavesdropping. I mean, this is like the most
2 basic concept. So you are asking me for a
3 peer-reviewed article, like I don't have one off
4 the top of my head, but I assure you there are
5 thousands of them documenting that.
6   Q.   Nor did you cite one in your
7 report?
8   A.   I don't need to. I don't need to
9 because I am an expert who has worked in this
10 industry for 30-plus years.
11   Q.   You are an expert in ad
12 technology?
13   A.   I'm an expert in internet,
14 security, networking. And what I'm telling you
15 is the technologies utilized to facilitate ad
16 technologies are basic, basic common, commonly
17 used internet technologies. They're the same
18 protocols, TCPIP, right. It's the same protocol
19 that is used to push data from a website to, for
20 example, an ad exchange. TCPIP. TCPIP
21 scrambles the data, moves the data, reconfigures
22 the data, and then on the other end they read
23 it. That data, if not encrypted is susceptible
24 to eavesdropping.
25   Q.   Do you consider yourself an

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1 expert in digital advertising technology?
2   MS. MAUSER: Object to form.
3   THE WITNESS: I consider myself
4   an expert in security and in this case
5   how it is applied in the digital
6   advertising space.
7 BY MR. FREEMAN:
8   Q.   Do you consider yourself an
9 expert in digital advertising technology?
10   MS. MAUSER: Object to form.
11   THE WITNESS: I consider myself
12   an expert in -- a security expert in how
13   it is applied in this particular case.
14 BY MR. FREEMAN:
15   Q.   So that answer to that is no, you
16 do not consider yourself an expert in digital
17 advertising technology, right?
18   MS. MAUSER: Object to form.
19   THE WITNESS: In the security
20   aspects of digital advertising.
21 BY MR. FREEMAN:
22   Q.   I want to go back to kind of
23 where we broke before taking our last break
24 about noise and specifically on paragraph 70 on
25 page 28 of your report.

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1   If you remember, we had went over
2 the quote from IAB tech lab chief?
3   A.   Yes, I remember that.
4   Q.   All right. And then I showed
5 you, and I think now you still have in front of
6 you, what's been marked as Ferrante Litigation
7 Exhibit Number 6.
8   Do you have?
9   A.   I do see that, yes.
10   Q.   Just so we're clear, is
11 Ferrante-Lit investigation Exhibit Number 6 the
12 document where you got the quote that's cited in
13 paragraph 70?
14   A.   You're asking me that?
15   Q.   Correct.
16   A.   If I cited it, I'm assuming so,
17 but --
18   Q.   Here, I'll help you out.
19   A.   Let's just confirm it.
20   Q.   Go to page 2, 2 of 9.
21   A.   Okay.
22   Q.   Right below where there's a blank
23 advertisement, do you see the quote there?
24   A.   I do see it now.
25   Q.   Okay. So is it fair that

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1 Ferrante Litigation Exhibit Number 6 is a source
2 of the quote that you put into your report?
3   A.   Yes.
4   Q.   Within this document, Litigation
5 Exhibit 6, do you see any statistical data to
6 support the claim that header bidding led to
7 publishers being more promiscuous in their
8 demand partnerships?
9   A.   What's your question?
10   Q.   Is there any statistical data
11 that supports the claim that you quoted that
12 header bidding led to publishers being more
13 promiscuous in their demand partnerships?
14   A.   So, I'm sorry. As I was reading
15 I was distracted. Can you repeat your question?
16   Q.   Sure.
17   Is there any statistical data
18 cited in government -- or Plaintiffs Exhibit 6
19 that supports the claim that you quoted which
20 stated that header bidding led to publishers
21 being more promiscuous in their demand
22 partnerships?
23   A.   So this is a piece -- so in this
24 particular case, what I'm talking about here is,
25 again, speaking about the prevent ad fraud

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1 amongst the noise, right, the lack of
2 guardrails. What I'm talking about in citing
3 this report is other leaders in the space
4 talking -- stating their views about how header
5 bidding led to publishers being more promiscuous
6 in their demand partnerships and willing to turn
7 on more demand partners, which made it easier
8 for bad actors to hide in plain site.
9   And what I'm talking about is how
10 the industry was trending in a direction that
11 was creating more risk, and then the industry
12 responding with additional security enhancements
13 to mitigate that risk. And so I speak about --
14 I quote the gentleman in paragraph 70. I talk
15 about the noise and how just the sheer volume
16 can allow for malicious actors to hide in plain
17 site.
18   And then I speak to the fact that
19 the industry was migrating to newer technologies
20 to help prevent that.
21   And so if you're asking me for a
22 statistic, we can look further down in page 3 of
23 9 in the article where it just talks about how
24 the adoption of the new technology is 80% of
25 risk in a certain particular malicious actor

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1 would have been mitigated if that security
2 enhancement was implemented prior.
3   Q.   But I'm asking you: did you
4 review any statistical data that supports other
5 leaders, quote, "that header bidding led to
6 publishers being more promiscuous in their
7 demand partnerships"?
8   A.   I didn't need to. It was
9 well-documented in the industry. This is one of
10 many cites that I read that talks about how
11 header bidding put revenue over quality, and
12 more and more users were able to get involved in
13 the bidding process, which created risk.
14   Q.   Is there academic peer-reviewed
15 articles that support the idea that header
16 bidding led to publishers being more promiscuous
17 in their demand partnerships?
18   A.   As I sit here right now, I can't
19 answer that.
20   Q.   So when you say it's
21 well-documented, it's well-documented where?
22   A.   In the data that I reviewed.
23   Q.   What data did you review?
24   A.   I've cited it in this, in this
25 report.

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1   Q.   Are you talking about Plaintiffs
2 Exhibit 6?
3   A.   Six, it was also noted in
4 Plaintiffs Exhibit 4 and through the course of
5 migration with my team. I mean, again, I've
6 cited this piece, just so I could cite this
7 piece, and you have something to look at. But
8 it was very clear. And if you think about it in
9 totality, when it comes to conducting these
10 operations, in totality, in addition to having
11 technical controls, having policy controls is
12 helpful in mitigating risk. And through the
13 course of my work every single day today, that
14 is exactly the advice that I give my clients.
15   And so when I came across this
16 data point and saw others commenting on it and
17 could see the effects of it, I thought it was a
18 very interesting and worthy data point for my
19 report.
20   Q.   We're talking about data point.
21 You're talking about an article published by
22 Trade Press, right?
23   A.   That is the cite -- that is the
24 article which I cited here, but there was
25 overwhelming material that I read.

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1   Q.   That were not Trade Press?
2   A.   Just other sources.
3   Q.   Like what?
4   A.   Again, through the course of my
5   investigation. I mean, I've cited it here, but
6   I'm not understanding what your question is.
7   Q.   I'm asking you: did you see
8   anything other than Trade Press articles that
9   support the idea that header bidding led to
10 publishers being more promiscuous in their
11 demand partnerships, other than Trade Press
12 articles?
13 A.   The Trade Press article that
14 cites the IAB tech lab CTO, I mean, this is a
15 reputable organization, and he is quoted in this
16 article. The source of the article, I mean,
17 AdExchanger, but he is the IAB tech lab CTO.
18 Q.   Isn't it possible to be misquoted
19 in a Trade Press article?
20 A.   I'm sure it is.
21 Q.   So what did you do to verify the
22 quote that you put in to your report that was
23 actually accurate?
24 A.   Well, like I said, I saw other
25 instances of it. Let me flip through Exhibit 4

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1   so I can point it out to you.
2   Q.   Exhibit 4 is also Trade Press,
3   right?
4   A.   Why do you keep saying "Trade
5   Press"? This is AdExchanger, is the source
6   here. This is Digiday.
7   Q.   You are not familiar with the
8   phrase "Trade Press"?
9   A.   The open internet?
10 Q.   Right. So Exhibit 6 and Exhibit
11 4 are just articles published on the open
12 internet, right?
13 A.   But there are articles citing
14 experts in the industry. They're citing people
15 who work in this industry.
16 Q.   Exhibit 4 says on -- "ad fraud
17 researcher who wants anonymity"?
18 A.   In that one particular quote.
19 Q.   So my question is, go back to it,
20 is: have you reviewed anything other than
21 articles published on the open internet that
22 support the idea that header bidding let
23 publishers -- led publishers be more promiscuous
24 in their demand partnerships?
25 A.   Did I review -- what was your

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1   question?
2   Q.   Did you review anything other
3   than articles published on the open internet
4   that supported the idea that header bidding led
5   to publishers being more promiscuous in their
6   demand partnerships?
7   A.   Yes, in what I used was my
8   professional experience in this industry. We
9   keep to coming back to this, but I do this work
10 every single day, looking at the totality of
11 information, understanding that through the
12 header bidding process it was well known in the
13 industry that they open the flood gates and
14 allowed revenues to take priority over quality.
15 And in my expert opinion, in my
16 expert work that I've been doing my entire
17 career that I built a career on, I view that as
18 risk. That's what I do. I evaluate risk. My
19 clients hired me to evaluate risk. I evaluated
20 that risk for the United States Government. And
21 I am telling you that that generated risk, and
22 that risk is easily mitigated, easily mitigated.
23 I don't need data to prove it, but easily
24 mitigated by having a proper know-your-customer
25 program in place, which is well adopted in

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1   various industries, know-your-customer mentality
2   or program at an organization and provide --
3   proves positive results.
4   And what I've done here is cite
5   articles of different -- of leaders in the
6   industry that reinforce my point.
7   Q.   Why did you say that you cited to
8   the article, which is Litigation Exhibit 6, just
9   so I could cite this piece and you have
10 something to look at?
11 A.   It's just -- I'm writing it --
12 I'm a technologist, okay, I talk ones and zeros.
13 I'm writing an expert report for a courtroom so
14 it could be understood. And I'm citing, again,
15 pieces of information that if someone reads the
16 report and they look at the citing, it makes
17 sense to them.
18 Q.   How much of the 3ve -- just so
19 we're clear for the record, 3ve spelled the
20 number 3-V-E, right?
21 A.   Correct.
22 Q.   How much of the 3ve's actions
23 occurred with publishers using header bidding?
24 A.   You know, as I sit here right
25 now, I'm not sure I can answer that question.

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1   Q.   What specific publishers saw an
2 increase in domain spoofing as a result of using
3 header bidding?
4   A.   I mean, it was a well known,
5 well-documented risk so much so that the entire
6 industry adopted ads.txt. So, again, I don't
7 want to talk in absolutes, but I will just say
8 that it was well known and well-documented, and
9 3ve highlighted that risk.
10   Q.   I'm asking you what specific
11 publisher saw an increase in domain spoofing as
12 a result of using header bidding?
13   A.   As I sit here right now, I can't
14 answer that. But I can say that it was a
15 well-known security gap in the industry to the
16 point that it was widely adopted after 3ve
17 because 3ve highlighted the significant risk
18 that existed.
19   Q.   I think you talked a little bit
20 about it already or mentioned it at times in
21 terms of ads like A-D-S, period, T-X-T?
22   A.   Ads.txt, correct.
23   Q.   What is that?
24   A.   It's comparable to the SPF record
25 in e-mail.

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1   Q.   Can a publisher use ads.txt when
2 using header bidding?
3   A.   Yes, of course.
4   Q.   So that mitigation tool is not
5 unique to any particular publisher ad server?
6   A.   No, it's meant to be implemented
7 on the actual website itself. As I said
8 earlier, think of it as SPF technology for
9 e-mail, sender policy framework, where you get
10 calls and validate the domain, the account, the
11 relationship and can actually validate that in
12 real time to make sure that you do, indeed, want
13 to speak to them or allow them to take part in
14 that process more appropriately.
15   Q.   Since being widely adopted in
16 2014 and 2015, do you know whether the use of
17 header bidding continues to grow?
18   MS. MAUSER: Object to form
19   foundation.
20   THE WITNESS: Okay. Can you
21   reask the question?
22 BY MR. FREEMAN:
23   Q.   So basically since 2014, do more
24 publishers continue to use header bidding?
25   A.   Sure. Header bidding is a

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1 framework, a framework that's widely adopted.
2 Header bidding exists today in enhanced formats
3 that have made it more secure.
4   I think what's important to note
5 is that organizations have adopted header
6 bidding and implemented it in their own unique
7 way that's best for them.
8   Q.   So if the use of header bidding
9 continues to grow, would you suspect that the
10 amount of malvertising or ad fraud would
11 increase as well?
12   A.   No, because header bidding as it
13 has grown in adoption and adopted by others in
14 the industry, it has evolved significantly since
15 it was introduced in 2014, 2015. There have
16 been significant security enhancements.
17   The risks that I spoke to you
18 about last time, a lot of them have been adopted
19 and implemented by the various users of header
20 bidding today. So header bidding is widely
21 used. Amazon TAM has their version of header
22 bidding; Prebid has their own open source freely
23 available, publicly available version of header
24 bidding that lots of publishers will utilize and
25 tweak to their own liking.

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1   I mean, that's the reality of
2 this industry is that this code exists. It's
3 evolved over years as with many things on the
4 internet. Security has been baked in, and
5 people continue to use it and evolve and evolve
6 with it.
7   Q.   So then are you saying that the
8 rate of data leakage with the use of header
9 bidding has gone down in recent years?
10   A.   As security enhancements in
11 header bidding have evolved and been
12 implemented, been, first of all, innovative --
13 innovated, adopted and then implemented, the
14 security enhancements, specific data leakage,
15 while I cannot speak, you know, definitively
16 across the industry, has gone down as people
17 have implemented the evolved version of header
18 bidding. It is the industry. It is a
19 cat-and-mouse game.
20   As I said earlier, security
21 adversaries sit home and they spend all day
22 every day looking to exploit technologies as
23 innovators, leaders invest time and energy and
24 collaborate with peers in the industry to
25 mitigate those risks. An entire profession has

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February 16, 2024

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1 been built on the latter part, candidly on the
2 former part as well, if I'm being honest.
3   Q.   Are you familiar with a Google
4 project called YAvin, spelled Y-A-V-I-N?
5   A.   As I sit here right now, I can't
6 recall.
7   Q.   Are you familiar with AdXDirect?
8   A.   As I sit here right now, I can't
9 recall.
10   Q.   So you're not opining whether
11 those projects increased or decreased security?
12   A.   Again, if there's a document you
13 want to show me, I'm happy to look at it, but I
14 can't recall how I know those.
15   Q.   But I'm asking whether you are
16 opining about those particular projects and its
17 effect on cyber security?
18   A.   And, again, I'm responding by
19 saying I can't recall where I read that or how I
20 would know those names as I sit here right now.
21   I know that Google has taken
22 considerable steps in their open bidding
23 framework which, you know, the features of open
24 bidding, which have migrated and been adopted by
25 other players in the industry and implemented in

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1 header bidding.
2   Q.   So you talked about open bidding.
3   What is open bidding?
4   A.   Open bidding is a framework
5 developed by Google that, you know, closed a lot
6 of the gaps and mitigated a lot of the risks
7 that I spoke about earlier today. It did away
8 with man-in-the-middle attacks on the wire. The
9 sensitive user data was passed by encrypted
10 communications. It did away with the listening
11 in plain site to nonlegitimate players in the
12 bidding process. It did away with the ability
13 for malicious actors to buy access to users'
14 machines. It spearheaded the effort with
15 partners in the industry to come up with the ads
16 technology, ads.txt framework. It created a
17 know-your-customer program, a vetting process.
18 And then, again, with those technologies, it
19 helped stop the essential competitive intel
20 collected on peers in the bidding process.
21   So, I mean, those are six points
22 that open bidding and Google identified and as
23 innovators of the space, in the space, worked to
24 develop -- talked about these features and then
25 were very quickly adopted by others in the

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1 industry and applied them in the header bidding
2 framework.
3   Q.   Did you do any sort of field test
4 with open bidding?
5   A.   Yes.
6   Q.   When did you do open bidding
7 field testing?
8   A.   Well, again, back to what I had
9 said earlier, knowing the protocols in place,
10 for example, encrypted communications, I know
11 encrypted communications cannot be intercepted.
12 We talked about that earlier. So conducting a
13 field test to ensure that you cannot capture
14 encrypted communications, that's easy.
15   The vetting of the program, of
16 course. I was not able to do that, to test the
17 vetting.
18   Ads.txt, I did see in plain site.
19 That's very easy to do. And then the data
20 leakage on the server side, I wasn't able to
21 test, of course, because I didn't have access to
22 that server side.
23   Q.   Did you do a field test as
24 preparation for your report here?
25   A.   On open bidding --

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1   Q.   Yeah, open bidding?
2   A.   Yeah, I just walked you through
3 it. Again, these are basic internet protocols.
4   Q.   What I'm asking, though, it was
5 after you were retained by Google on this
6 particular case that you were conducted this
7 field test?
8   A.   Sure. In this particular case
9 with respect to let's say ads.txt and encrypted
10 communications. But I will highlight with the
11 exception of ads.txt that sort of testing on
12 encrypted communications is what we do every
13 day. So -- but, yes, after being retained,
14 looking at -- sniffing the wire for technical
15 information, both encrypted and unencrypted is
16 very standard in the industry and something that
17 not only we did for this. But candidly, I mean,
18 we're working on, I would say, a dozen cases
19 right now related to ads technology, ad
20 technology that is -- that is collecting data on
21 users with or without their consent and then
22 sending it somewhere. So we're doing a lot of
23 test -- a lot of work in that space right now.
24   That's why when I talked earlier
25 about my predictions piece, when I talked about

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1 government -- government regulations and
2 third-party risk, that's exactly where that's
3 coming from. You'd be surprised how many
4 publishers' websites implement different
5 technologies on their site that they just don't
6 understand how they work. It's actually a
7 really big trend right now, third-party risk.
8   Q.   How many field tests did you
9 conduct on open bidding? I'm sorry?
10   A.   I wanted to make sure you were
11 able to read your note.
12   Q.   I can.
13   A.   Okay. Again, the technologies
14 are not -- they're trivial. I mean, you are
15 talking about encrypted communication. So how
16 many tests have I run on the encrypted
17 communications used in open bidding? I've done
18 thousands of them because that's what I do in my
19 industry. That's like -- that's like asking
20 Tiger Woods how many golf balls he hits in his
21 lifetime, okay? That's what I do. And in this
22 particular case, once retained, of course, we
23 looked and we said, okay, if header bidding is
24 clear text, let's see the clear text, and now
25 let's look at encrypted coms and make sure it is

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1 what it is. And so we did that.
2   The ads.txt was actually quite
3 easy. I mean, I can -- it's super easy to see
4 and to understand how it works. So to see the
5 implementation of ads.txt is super simple.
6   Q.   I want to be clear, when you say
7 thousands of fields tests, I'm specifically
8 asking about field tests with open bidding.
9   Are you saying you did thousands
10 of field tests on open bidding?
11   A.   No, you're -- maybe I'm not doing
12 a good job of explaining myself.
13   Opening bidding is a framework
14 that uses secure communications. And what I did
15 as an expert in the industry and know how
16 communications work, whether it's clear text or
17 encrypted communications, I, through the course
18 of my career, have conducted thousands of tests,
19 man-in-the-middle tests, packet sniffing tests
20 on encrypted communications, thousands, because
21 that what I do. I mean, that's my job. I did
22 it for the government; I do it here in private
23 practice.
24   Once retained by Google and
25 investigating header bidding versus open

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1 bidding, of course we looked at the
2 communication types; clear text versus
3 encrypted. And so we demonstrated to ourselves
4 like, look, here's the difference between the
5 two. So all we needed as was one in this
6 particular case because it confirmed what we
7 already knew. And if I'm being honest, we did
8 it to the benefit of the younger staff.
9   Q.   Did you see any documents about
10 the detection rate of malvertising or ad fraud
11 for ads served through open or exchange bidding
12 in 2016?
13   A.   I'm sorry, can you -- can you
14 repeat that question?
15   Q.   Sure.
16   What was the detection rate of
17 malvertising or ad fraud for ads served through
18 open or exchange bidding in 2016?
19   MS. MAUSER: Object to form.
20   THE WITNESS: When you say "open
21   or exchange bidding," do you mean open
22   or header bidding?
23 BY MR. FREEMAN:
24   Q.   No, open and exchange bidding are
25 synonymous with Google; would you agree with

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1 that?
2   A.   Exchange bidding, I mean, I refer
3 to it as open bidding.
4   Q.   Do you know what exchange bidding
5 is in the context of Google?
6   A.   The term I've been using is "open
7 bidding."
8   Q.   Okay.
9   A.   So -- for in the interest of
10 clarity, because Google does have a habit of
11 renaming technologies, I will be referring to it
12 as "open bidding."
13   Q.   What was the detection rate of
14 malvertising or ad fraud for ads served through
15 open bidding in 2016?
16   A.   As I sit here right now, I'm not
17 sure. I guess I would ask you if it's cited in
18 my report, I'm happy to talk through it.
19   Q.   Do you know the detection rate
20 for malvertising or ad fraud for ads served
21 through open bidding for any year?
22   A.   I would say pre ads.txt,
23 malvertising and domain spoofing, I mean, it was
24 high, it was climbing. It was a known --
25 malvertising was a known threat.

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1   I mean, I remember when I was in
2   the government in 20 -- 2005, 2006, 2007, we
3   were seeing more and more -- we were seeing that
4   more and more as a vector. As I said earlier,
5   there was spam e-mail and phishing e-mail, and
6   it was migrating to malvertising, you know, in
7   the various forms of malvertising.
8   So I don't have specific data
9   right in front of me, but I can tell you that as
10   a US Government employee, as an FBI agent, we
11   were talking about it more and more in the squad
12   area, we were seeing more and more threats
13   introduced through that vector, and it was just
14   becoming commonplace.
15   Q.   You said pre ads.txt,
16   malvertising was high.
17   How do you quantify that?
18   A.   I'm just telling you based on my
19   professional experience working in the field, we
20   were talking about it more and more.
21   I remember vividly just being in
22   the squad area of the FBI, working my cyber
23   cases, and, you know, starting to talk with my
24   colleagues and learn about their cases and, you
25   know, them talking about, hey, you know, this is

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1   something, you know, we're seeing more and more
2   of these days. You know, at the time they
3   called it malvertising. Of course since then,
4   it's been broken out in various aspects of
5   malvertising, but essentially pay loads or risk
6   introduced through advertising technologies.
7   Q.   Do you make any comparison of the
8   rate of malvertising or ad fraud in open bidding
9   compared to the waterfall dynamic?
10   A.   I believe I did in my report. I
11   believe I spoke about some advantages of
12   waterfalling. Is there something you want to
13   point me to and we can talk through it?
14   Q.   I'm not sure it's in there.
15   What I'm asking for is: do you
16   compare open bidding in the waterfall dynamic in
17   terms of malvertising or ad fraud?
18   A.   I'm not even sure I understand
19   your question. Waterfalling is pre header
20   bidding and certainly pre open bidding. It was
21   essentially the first iteration of -- widely
22   adopted first iteration of digital advertising.
23   Q.   And one of the arguments you make
24   is that the waterfall dynamic was more secure
25   than header bidding, right?

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1   A.   That's what I asked you. If
2   there's a particular point in the report, I'm
3   happy to talk through it. And when you asked
4   the question, you jogged my memory. Is there a
5   paragraph you want to talk through? Because I
6   do remember making that statement.
7   Q.   But I want to talk about not
8   compared to header bidding.
9   I'm saying the waterfall dynamic
10   compared to open bidding.
11   A.   Okay. So what's your question
12   again?
13   Q.   Do you make any comparison of the
14   rate of malvertising or ad fraud, open bidding
15   compared to the waterfall dynamic?
16   A.   I don't know if you can because
17   waterfalling was essentially retired once header
18   bidding came into play. Or if it wasn't
19   retired, it was just, you know, wasn't widely
20   adopted, so I'm not sure if you can make that
21   comparison.
22   Q.   Could you not look at historical
23   numbers of malvertising or ad fraud from the
24   waterfall dynamic compared to statistics from
25   open bidding?

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1   A.   Again, they didn't exist in the
2   same -- right, widely adopted, they didn't
3   exist. Waterfalling evolved into header
4   bidding, which evolved into open bidding. So
5   the two book ends, you know, I'm not sure if
6   there's enough data to compare that.
7   Q.   So a the answer is you didn't
8   make any comparison, though, between open
9   bidding in the waterfall dynamic in terms of
10   malvertising or ad fraud?
11   A.   The answer is I don't think it's
12   possible to make that comparison.
13   Q.   It's not possible to look at
14   historical rates of malvertising and ad fraud in
15   the waterfall dynamic, and take those historic
16   numbers and compare them to the numbers of
17   malvertising or ad fraud for open bidding?
18   A.   I mean, you're talking about
19   maybe years later. I mean, the industry
20   completely changed. The tools, techniques and
21   protocols of the adversaries completely changed.
22   I mean, you are not measuring apples to apples
23   here. You're measuring apples in one era
24   towards oranges in another. I mean, it's
25   completely different.

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1   I can tell you what I view as the
2 advantages of waterfalling, but you're not
3 asking me that question.
4   Q.   But I'm asking for the
5 statistical support for that, of what was the
6 rate of malvertising or ad fraud when the
7 waterfall dynamic was widely adopted and used?
8   A.   It was low.
9   Q.   Like what?
10   A.   I don't know. But I can tell you
11 that because the way the waterfalling process
12 was functioned, that the concept of
13 know-your-customer and the rating of your
14 advertiser actually, you know, organically and
15 not by design helped mitigate that particular
16 risk of malvertising.
17   Q.   You say it was "low," low using
18 what metric?
19   A.   I don't know. I don't have data.
20 If you could point me to that particular
21 paragraph in my report, we both know it's in
22 here and in the interest -- I mean, I'm happy to
23 look for it, but it's your time. I'm happy to
24 talk you through it.
25   Q.   I'm asking you whether you knew

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1 or know now the rate of malvertising or ad fraud
2 when the -- waterfall dynamic was widely adopted
3 and used?
4   A.   I'm just going to take a second
5 to try to find that paragraph.
6   Q.   Okay.
7   A.   (Witness reviews document.)
8   MS. MAUSER: It's up to you if
9   you want him to look for the paragraph.
10   It's right in front of him, he knows
11   it's there. I can --
12   MR. FREEMAN: Sure. You can tell
13   him.
14   MS. MAUSER: Anthony, I believe
15   it's paragraph 72 that you're looking
16   for. That's the only reference I
17   recall.
18   THE WITNESS: So much easier when
19   you can do these virtually because you
20   can search the documents. Okay, let me
21   read paragraph 72.
22   (Witness reviews document.)
23   Okay, now, I'm sorry, what was
24   your question?
25 BY MR. FREEMAN:

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1   Q.   You had stated that the rate of
2 malvertising or ad fraud when waterfall dynamics
3 was widely adopted was "low," was your word.
4   I'm asking you to quantify that
5 for me, what does "low" mean?
6   A.   It was just low compared to
7 header bidding.
8   Q.   How do you know if something is
9 low compared to something else if you don't know
10 the rate in which it's occurring in the
11 waterfall?
12   A.   I'm making that assessment based
13 on the totality of the information that I
14 reviewed. And that when the waterfall technique
15 was utilized, there was a lower rate of
16 malvertising for specific reasons surrounding,
17 as I said earlier, the know -- a
18 know-your-customer organic program that wasn't
19 even -- wasn't even an intention, but it was a
20 positive by-product of the waterfall technique.
21 Because the way the waterfall technique worked
22 is only reputable people, bidders that you had
23 done business before in the past that it served
24 up legitimate, quality ads would climb to the
25 top. And therefore, if they offered the price

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1 that you were looking for, they would win the
2 bid and be able to place the ad.
3   That also helped protect user
4 data. Rather than send the sensitive user data
5 to all bidders, it just went to those who
6 actually had an opportunity to bid on the
7 auction. And so that technique, again, it was
8 an organic by-product of the technique, did
9 ensure lower malicious rates, lowest -- lower
10 malicious activity rates in the waterfall
11 technique.
12   Q.   Is it fair to say, though, you
13 can't quantify what that means?
14   A.   No, I don't think that's fair to
15 say. I can say that in my report, I have not
16 cited any of that specific data, but I'm quite
17 certain that that can be done; waterfalling
18 compared to header bidding.
19   Q.   Isn't that one of your points
20 that you're trying to make that waterfall
21 technique was more secure than header bidding?
22   A.   In my professional opinion, I do
23 believe that.
24   Q.   So why wouldn't you cite the
25 statistical data to support that?

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1   A.   Because it's a retired
2 technology. Paper and pen and letters are more
3 secure than e-mail, but it doesn't mean people
4 still use it.
5   Q.   Are you saying that you've seen a
6 statistical analysis of the rate of malvertising
7 when the waterfall was widely adopted?
8   A.   No, I'm not saying that at all.
9 I'm saying that in my reverse engineering and
10 understanding of waterfalling and the material
11 that I've read, again, as an organic by-product
12 of the technique, it actually was more secure
13 for the reasons I outlined than header bidding.
14   But unfortunately, the industry
15 evolved. And don't get me wrong, there are
16 benefits, different benefits in header bidding
17 than waterfalling. But with the introduction of
18 those other benefits, it also introduced new and
19 other risks. That's the industry we live in;
20 that's the world we live in and how things
21 operate. And I think that's just a reality.
22   Q.   But if you don't have a
23 statistical metric to measure the rate of
24 malvertising in the waterfall, and you don't
25 have a statistical metric of the rate of

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1 malvertising with the using of header bidding,
2 how can you say one is higher than another?
3   A.   Again, as I sit here as the
4 expert in this case just unpacking the two
5 techniques and understanding how they work, it's
6 just -- how could you not think that? I mean,
7 you're talking about a bid going to three
8 people, three of your trusted partners, for
9 example, versus a bid going to 300 people that
10 you don't even know. Of course there's going to
11 be more risk.
12   Do I have a statistical analysis
13 of that? I do not. And I'm going to say I do
14 not because you're talking about a technology
15 that's been retired for years and replaced with
16 header bidding. And so I'm not sure where that
17 data would lie. And even if that data did
18 exist, I'm not even sure if I would -- if I
19 would believe it was valid to the point where I
20 would want to sit before you and represent it.
21   Q.   Well, header bidding, as we've
22 already established, is still currently being
23 used, right?
24   A.   That is correct. The evolution
25 of header bidding to where it is today with the

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1 various security enhancements is being used.
2 But, again, it is being implemented, different
3 people are implementing it in different ways.
4   Q.   And open bidding is still being
5 used, right?
6   A.   Correct.
7   Q.   So what is the current rate of
8 malvertising or ad fraud in opening bidding?
9   A.   I mean, as I sit right here in
10 this chair and I'm asked the question, I can't
11 answer it. And I'm wondering if it was in my
12 report.
13   Q.   What is the current rate of
14 malvertising or ad fraud in header bidding?
15   MS. MAUSER: Object to form.
16   THE WITNESS: I'm not sure if I
17   could answer that. I know in my report
18   I talk about ad fraud and malvertising
19   on the rise to the point of reaching a
20   hundred billion dollars by 2024. I
21   mean, ad fraud and malvertising is only
22   going to increase. I mean, it's the
23   world we live in. With the adoption of
24   more bandwidth, more internet-connected
25   devices, more users. And, of course, as

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1   I've said before is adversaries sit home
2   and cook up new ways in which to defeat
3   defenses, we're going to continue to see
4   a rise in this -- in this sort of
5   activity.
6   MR. FREEMAN: I don't know how
7   long we've been going, yeah, it's been
8   about an hour. We can take a break.
9   MS. MAUSER: Sure.
10   THE VIDEOGRAPHER: Off the record
11   at 4:54. This ends media unit number
12   five.
13   (Brief recess)
14   THE VIDEOGRAPHER: On the record
15   at 5:05. This begins media unit six in
16   the deposition of Anthony Ferrante.
17 BY MR. FREEMAN:
18   Q.   I want to move to the topic of
19 3ve that you discuss in your report.
20   So when was 3ve first identified
21 as a potential problem?
22   A.   Give me one second here.
23   (Witness reviews document.)
24   Trying to find it in my report so
25 I can get the exact date. Here we go.

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1   Q.   I'll direct to you paragraph 58
2 on page 24.
3   A.   Okay, thank you.
4   Q.   The last sentence you quote -- or
5 you state "The publishers paid over 29 million
6 of United States dollars to the fraud service,"
7 and then you put a date range of between
8 January 2016 through May of 2017.
9   Do you see that?
10   A.   I do see that.
11   Q.   So is it fair to say that at some
12 point in 2016 3ve was identified as a problem?
13   A.   You know, knowing how things work
14 on the government side, it's hard to say exactly
15 when but certainly within that period.
16   Q.   Did you personally participate in
17 the investigation of 3ve?
18   A.   No, I did not.
19   Q.   Did you personally participate in
20 the prosecution of 3ve?
21   A.   No, I did not.
22   Q.   Were you ever called as a witness
23 for any court proceeding relating to the
24 prosecution?
25   A.   Of 3ve?

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1   Q.   Yeah.
2   A.   No, I was not.
3   Q.   Just so we're clear, we're
4 talking about 3ve. It was more than just one
5 individual ultimately charged; is that right?
6   A.   I don't recall the exact details.
7   Q.   Okay. At the time 3ve was
8 investigated, you had already left the FBI; is
9 that right?
10   A.   Again, I don't know. I didn't
11 leave the U.S. government until April of 2017 so
12 --
13   Q.   Okay.
14   A.   I was still a government
15 employee, I'm sure, when it was being
16 investigated. But as we talked earlier, I was
17 detailed or assigned over to the White House, so
18 I wouldn't have been privy to information like
19 this.
20   Q.   So then you described 3ve on page
21 53 -- sorry, paragraph 53, page 22, just the
22 first sentence says "One of the most massive and
23 complex fraud operations in digital
24 advertising."
25   Do you see that?

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1   A.   Yes.
2   Q.   And at the bottom of that
3 paragraph you say "At its peak, 3ve generated
4 between 3 billion and 12 billion or more daily
5 ad bid requests."
6   Do you see that?
7   A.   I do see that.
8   Q.   Okay. What percent of those
9 fraudulent bid requests generated by 3ve went
10 through AdX?
11   A.   Open bidding?
12   Q.   Sure, we can do open bidding.
13   A.   You know, I'm not sure, but I can
14 tell you that it was Google and White Ops that
15 actually uncovered open bidding, so I don't have
16 the exact statistical data.
17   MS. MAUSER: Repeat your last
18   answer. I think you may have misspoke
19   but just --
20   THE WITNESS: Okay.
21   MS. WOOD: Do you want to have
22   the court reporter read it back?
23   (The court reporter read back the
24   record as requested.)
25   THE WITNESS: It was Google and

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1   White Ops that uncovered 3ve.
2 BY MR. FREEMAN:
3   Q.   But part of Google identifying
4 and helping with the prosecution of 3ve is
5 because that fraudulent activity was occurring
6 on their platforms?
7   A.   That is correct. That is a safe
8 assessment to make. I don't know the
9 statistical data, but it is safe to say.
10   Q.   Do you know, while not the
11 precise number, was it more than 50% of the
12 fraudulent bid requests were on Google platforms
13 in regards to 3ve?
14   A.   Again, I don't know the number,
15 but I do know that it was Google who was
16 instrumental in identifying it. I also know
17 that it was Google who was instrumental in
18 developing technologies to prevent it from
19 happening again.
20   Q.   On page 26 of your report, Figure
21 H, that shows the bid request you say "Shortly
22 after the takedown of 3ve," correct?
23   A.   That is correct.
24   Q.   Did you review any of the
25 underlying data for this graph?

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1   A.   I did not review the underlying
2 data associated with this graph. Statistical
3 data, that is.
4   Q.   Where did the -- where did this
5 graph come from?
6   A.   I'm not exactly sure.
7   Q.   Is this a graph showing bid
8 requests right before and after the takedown of
9 3ve only on Google platforms?
10   A.   Again, I'm not -- I'm not sure.
11 As I sit here right now, I just can't recall.
12   Q.   Do you have any evidence or
13 information to suggest that Google's products
14 were less vulnerable to 3ve's attacks than
15 others?
16   A.   Can you repeat the question?
17   Q.   Sure.
18   Do you have any evidence or
19 information to suggest that Google's products
20 were less vulnerable to 3ve's attacks than
21 others?
22   A.   When you say "Google's products,"
23 are you referring to a specific product?
24   Q.   I'm referring to DFP, double
25 click for publisher, and AdX, which depending on

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1 the timeframe we're talking about GAM?
2   A.   So the advertising
3 technologies -- you're asking if Google's
4 advertising technologies were less secure
5 against 3ve; is that your question? I'm sorry.
6   Q.   Mine was slightly different.
7   Mine was: do you have any
8 evidence or information to suggest that Google's
9 products were less vulnerable to 3ve's attacks
10 than others, which I think is the opposite of
11 what you're saying.
12   Were they more -- do you have any
13 evidence to suggest that they were more secure
14 than others?
15   A.   I will say that I think the
16 entire advertising industry was susceptible to
17 the 3ve attack, and that's why I think it
18 happened at the scale that it did. The 3ve
19 attack highlighted a security gap essentially,
20 as I said earlier, in the similar concept to the
21 SPF, the sender policy framework, that validates
22 partners that you want to conduct business with
23 in the advertising work space, in the
24 advertising space. So I didn't look at one
25 versus the other because I viewed them both

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1 susceptible to the 3ve attack. And when I say
2 "both," I mean open bidding and header bidding.
3 It utilized domain spoofing at such a large
4 scale programmatically, and that's exactly what
5 ads.txt as a result of the 3ve, that's exactly
6 what ads.txt was created to mitigate against.
7   Q.   So you talked about a security
8 gap that 3ve exploited, I don't know if you used
9 that word --
10   A.   Highlighted, exploited, sure.
11   Q.   But that security gap existed
12 both outside of Google's platforms and products
13 and also within Google's platforms and products,
14 right?
15   A.   You keep saying "products," but I
16 want to be really -- just because Google has so
17 many products, I want to be specific and say
18 their advertising products, fair?
19   Q.   Fair.
20   A.   Okay, yes.
21   Q.   We can be more specific.
22   That the security gap that
23 existed that 3ve exploited also was a security
24 gap within GAM, right?
25   A.   The spoofing of the domains?

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1   Q.   Correct.
2   A.   I want to be really clear because
3 3ve is a multi-faceted operation that involved
4 malware and recruitment of bots for a bot net,
5 but the actual -- okay, I want to be really,
6 really clear here, the actual creation and
7 interaction with spoofed domains was what was a
8 security gap in the advertising industry. And
9 that aspect of 3ve was leveraged both in header
10 bidding and open bidding, that aspect of it.
11 There is so much more to 3ve, you know, the
12 exploitation of data centers, the exploitation
13 of BGP, which is, I mean, the internet, right.
14 And so in reading that, I mean, right away I
15 said these are significant Russian hackers who
16 conducted this operation. So there was a huge
17 operation exploiting various aspects of the
18 internet.
19   But specific to your question,
20 the gap that was identified was the in -- the
21 nonverification of domains that publishers were
22 communicating with, and that's what was
23 leveraged by 3ve in both header bidding and open
24 bidding.
25   Does that make sense?

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1   Q.   So once Google and White Ops
2   identified this potential problem, before the
3   takedown is what I'm saying, did they seek the
4   assistance from any other entities?
5   A.   Yes, it's my understanding that
6   they reached out to government, Department of
7   Justice, the Federal Bureau of Investigation,
8   Homeland Security. I understand they talked to
9   other security researchers in the industry.
10   I mean, the way I read it and in
11   my experience and having been involved with a
12   few of these in my time in government is they
13   created a task force to fight this problem.
14   It's a very common approach to a big problem
15   like this.
16   Q.   What did you do to understand the
17   3ve attack?
18   A.   Understand the 3ve attack?
19   Q.   Yeah.
20   A.   I read the open source material
21   on it.
22   Q.   Did you read anything that was
23   not publicly sourced about the 3ve attack?
24   A.   No. I mean, if you're
25   specifically asking me if I read any government

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1   material on it, the answer is no. But I also
2   only read what was publicly available on the
3   internet.
4   Q.   What is your understanding of why
5   Google and White Ops sought the assistance from
6   outside entities?
7   A.   It's very common. It's very
8   common for entities like Google, like White Ops,
9   like Microsoft. I mean, name the player. I
10   mean, even smaller players identify risk or
11   identify fraud on the internet and seek the
12   assistance from government. It is -- I mean, I
13   think it's the model we all want to strive for.
14   You know, this partnership mentality where we're
15   all in it together.
16   And as you can appreciate, Google
17   has certain insights that I know from my
18   experience the government would love. But, of
19   course, there's -- there's checks and balances
20   in place. However, when Google identifies fraud
21   or malicious activity in the interest of
22   protecting the overall infrastructure that we
23   all utilize every day as American citizens, they
24   do have the ability to raise their hand and
25   reach out to government for assistance. And in

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1   those particular cases at this level, it's not
2   unusual to create this task force approach to
3   combat these threats. It's very, very common.
4   Q.   Did Google have any financial
5   incentives to reach out to the FBI to help fight
6   the 3ve attacks?
7   A.   So I can actually answer this
8   specific to my experience in private practice
9   now for the last seven years. There's actually
10   no financial benefit in cooperating with the
11   government. As a matter of fact, it's extremely
12   expensive. And in the cases that I'm working
13   today, cooperating with the government, it's a
14   lot of money for these organizations, but they
15   do it for the right reasons. And, you know, I'm
16   grateful for that.
17   Q.   How much money did Google lose as
18   a result of 3ve?
19   A.   I'm not sure.
20   Q.   So are you really saying that
21   Google didn't have any financial incentive to
22   reach out to the FBI to help them stop the 3ve
23   attacks that were costing them money on their
24   platforms?
25   MS. MAUSER: Object to form. Go

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1   ahead.
2   THE WITNESS: I'm not saying --
3   sorry. I'm not saying -- I mean, I
4   can't answer if they had any financial
5   incentives.
6   What I'm stating is in my
7   professional experience as a security
8   expert working exactly these matters
9   every day -- right now I'm working half
10   a dozen cases with the U.S. government
11   standing shoulder to shoulder with me,
12   and I can tell you from personal, real
13   experiences that I watch these companies
14   hemorrhage cash as they work as partners
15   with the U.S. government.
16   So I don't know if they had any,
17   to use your term, financial gain, but I
18   can tell you that it's also a financial
19   burden to them as they cooperate with
20   the U.S. government.
21   And the cases I'm working are not
22   nearly the size of the 3ve takedown, so
23   I can only imagine the expenses that
24   they incurred.
25   BY MR. FREEMAN:

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1   Q.   But wasn't Google hemorrhaging
2 cash as a result of the 3ve attacks?
3   MS. MAUSER: Object to form.
4   THE WITNESS: I mean, I'm not
5   sure of your question.
6 BY MR. FREEMAN:
7   Q.   You used a phrase that companies
8 were hemorrhaging cash as they work as partners
9 with the U.S. government?
10   A.   I was speaking to my experiences
11 as a security professional in the field today.
12 And in the last seven years, I've worked
13 multiple cases shoulder to shoulder with the
14 U.S. government, and I have watched these
15 companies, again, to use my term, hemorrhage
16 cash as they do the right thing and partner with
17 the government to create a more safe and secure
18 internet or safe and secure experience for US
19 citizens.
20   I cannot speak to Google's
21 financial gains or losses. I'm only speaking to
22 my experiences with similar types of
23 interactions and partnerships with me and
24 companies in the U.S. government.
25   Q.   Do you know how much money Google

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1 spent as part of their assistance in the
2 investigation of 3ve?
3   A.   I will tell you off the top of my
4 head I can't recall as I sit here. I will ask
5 you if it's noted in my report, if you want to
6 talk about it.
7   Q.   I didn't see any specific number
8 that you were attributing to Google's spending
9 on the investigation of 3ve. And so I was
10 asking if you knew it independent of anything
11 written in your report?
12   A.   Yeah, no, sir. I do not have
13 that information.
14   Q.   How do you think the
15 investigation and prosecution of 3ve will assist
16 a jury in determining whether Google monopolized
17 or attempted to monopolize any product?
18   MS. MAUSER: Object to form.
19   Outside the scope of his report and his
20   expertise.
21   THE WITNESS: Yeah, I don't think
22   I can answer that question.
23 BY MR. FREEMAN:
24   Q.   Why don't you think you can
25 answer that question?

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1   A.   I mean, one, I can't speculate
2 what a jury might think. And then, I mean, the
3 obvious part my scope of this matter is so
4 focused that I don't think it captures the
5 totality of the information.
6   Q.   I want to direct you to paragraph
7 19 of your report, which is page 21.
8   A.   Paragraph 19?
9   Q.   I'm sorry, paragraph 49, I'm
10 sorry.
11   MS. MAUSER: Page 21.
12 BY MR. FREEMAN:
13   Q.   Page 21, paragraph 49. And in
14 that first sentence of paragraph 49, you say
15 quote, "Google has invested substantial amounts
16 of time, money and knowledge into the
17 development of standards, tools and industry
18 working groups in order to bolster the security
19 of the advertising ecosystem."
20   Do you see that?
21   A.   I do see that.
22   Q.   How much money has Google spent
23 last year in developing these standards and
24 tools?
25   A.   I can't answer that question as I

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1 sit here right now. I'm not sure I had access
2 to that information.
3   Q.   Did you ask for that -- access to
4 that information?
5   A.   I am going to say I didn't ask
6 for it because I believe I know the answer to
7 that question. I don't know if that's something
8 you can easily assess.
9   Q.   What I'm trying to get at is can
10 you quantify your statement that Google has
11 invested substantial amounts of money in
12 developing these standards and tools, how much
13 money?
14   A.   I can quantify it in the sense
15 that I can use this language. Because as
16 someone who has worked in the industry for as
17 long as I have, knowing what goes into the
18 development of a brand new protocol, for
19 example, ads.txt, the amount of time and energy
20 is invested in working groups alone. I mean,
21 when I was at the White House, I worked with
22 working groups from Google, from Amazon, from
23 Microsoft. They have, you know, representatives
24 and dedication to the various causes.
25   The development of tools takes

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1 time. I mean, in my professional career,
2 whether through government -- whether in
3 government or private practice, any time taken
4 to develop tools is significant, which requires
5 an investment.
6   So as a security professional and
7 as someone who has been involved with the
8 investment of time, the investment of money, the
9 investment of knowledge, the investment of
10 development of standards, the development of
11 tools, the investment and development of working
12 groups, all those things I've been a part of and
13 either led or been at the table and contributed.
14 And I know how significant in time, human
15 resources and financial resources it takes. So
16 that's why I make these statements.
17   Q.   And how would you define the word
18 "substantial" meaning a substantial amount of
19 money, what does "substantial" mean?
20   A.   I would say it's a -- I mean,
21 "substantial" to me means substantial.
22   Q.   That's not a definition. So how
23 would you define substantial as you used it in
24 this particular paragraph?
25   A.   I'm not sure I understand the

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1 question. I would say --
2   Q.   Is a million dollars substantial
3 to you?
4   A.   I would say it's not a trivial
5 amount for a big tech organization.
6   Q.   Okay.
7   A.   I can tell you that I've assisted
8 other big tech organizations that have invested
9 substantial amounts of money. And without
10 compromising confidentiality, I can tell you
11 that it's far more than a million dollars.
12   Q.   Did you see any financial
13 documents from Google indicating how much money
14 they spent on developing standards, tools to
15 bolster the security of the advertising
16 ecosystem?
17   A.   No.
18   Q.   Do you know how much Amazon
19 spends a year developing standard tools in order
20 to bolster the security of the ecosystem?
21   A.   I do not.
22   Q.   Do you know how much Meta spends?
23   A.   I will say that I work in this
24 industry every single day. And without
25 compromising confidentiality of my clients, I

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1 can tell you that I know across big tech that
2 substantial amounts of money are invested in the
3 securitization and the development of standards,
4 working groups, all the things listed in
5 paragraph 49, the first sentence that we talked
6 about with Google. I can say confidently that
7 that investment is not trivial, and it is
8 significant.
9   I have been, excuse me, a part of
10 discussions in big tech, and I have actually
11 contributed to those investments in human
12 resources and in working groups with other peers
13 in the security industry, and I know it's
14 significant. And I cannot say more without
15 compromising confidentiality, and I won't do
16 that.
17   Q.   Do you hold that same belief that
18 Amazon is spending substantial amounts of money
19 to develop standard tools to bolster the
20 security of the advertising ecosystem?
21   A.   So I just need to be really clear
22 here. Big tech is a small group of people, and
23 I'm not comfortable talking and actually naming
24 organizations. But I can tell you that I work
25 in this space every day, and I have been called

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1 to assist organizations in big tech in response
2 to bolstering advertising technologies. And I
3 see and understand through my workings with them
4 the investments they are making, the investments
5 that they are making. And it is substantial.
6 That is my term, and I stand by it based on my
7 experiences.
8   Q.   Including companies like Amazon,
9 right?
10   A.   I'm going to leave it at big
11 tech.
12   Q.   So big tech meaning more than
13 just Google?
14   A.   I'm going to leave it at big
15 tech. I am your security expert. I'm quite
16 certain that throughout the course of this case
17 you can get a financial expert to actually
18 provide better opinions on that.
19   Q.   Well, I'm asking about your
20 opinion that you wrote in your report where you
21 say "Google has invested a substantial amount of
22 money, among other things, time, money and
23 knowledge." I'm focusing right now on money, of
24 what that means and how that compares to other
25 big tech groups.

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1   So why don't you feel confident
2   saying that Amazon spends and invests
3   substantial amounts of money for standard tools
4   in order to bolster the security of the
5   advertising ecosystem, but you are confident to
6   say Google does?
7   MS. MAUSER: Object to form.
8   THE WITNESS: I'm not saying that
9   at all. What I'm telling you is that I
10   want to respect the confidentiality of
11   my agreements with my clients, and that
12   I'm telling you that every day I'm doing
13   work in big tech on this topic, and I
14   see the investment they're making. And
15   I consider their investment substantial.
16   And I consider the actions that they are
17   taking are on par with what I see
18   through my experiences and what I have
19   seen Google.
20 BY MR. FREEMAN:
21   Q.   Do you know how much money Criteo
22 is spending on developing standard tools to
23 bolster the security of the advertising
24 ecosystem?
25   A.   I do not.

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1   Q.   Would you consider what Criteo
2   spends to be a substantial amount of money?
3   A.   I don't know what they spend.
4   Q.   What about The Trade Desk, are
5   they spending substantial amounts of money to
6   develop standard tools in order to bolster the
7   security of the advertising ecosystem?
8   A.   As I sit here right now, I can't
9   answer that question.
10   Q.   What about OpenX?
11   A.   As I sit here right now, I can't
12 answer that question.
13   Q.   What about Magnite?
14   A.   As I sit here right here, I can't
15 answer that question.
16   Q.   So it's possible that those
17 companies are also spending substantial amounts
18 of money in developing standard tools in order
19 to bolster the security of the advertising
20 ecosystem?
21   MS. MAUSER: Object to form.
22   THE WITNESS: Again, as I sit
23   here right now, I can't answer that
24   question. I would just also say that
25   you're very focused on money. It's not

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1   only about money. It's about time, it's
2   about knowledge, it's about sharing of
3   information.
4   BY MR. FREEMAN:
5   Q.   Are you saying it's not possible
6   that Criteo or Trade Desk or OpenX is spending
7   substantial amounts of time developing standard
8   tools -- standards and tools in order to bolster
9   the security of the advertising ecosystem?
10   MS. MAUSER: Object to form.
11   THE WITNESS: I'm not saying that
12   at all. I'm just responding to your
13   question, which was specific about money
14   only. And I'm saying that it's not only
15   about money. It's about time, money and
16   knowledge, as I've written in my report
17   here.
18 BY MR. FREEMAN:
19   Q.   Okay. Let's talk about time.
20   How are you defining substantial
21 amounts of time as you state in paragraph 49,
22 how do you quantify that?
23   A.   Time is -- I would quantify that
24 with a human resources commitment to issues.
25   Q.   Is 100 hours a substantial amount

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1   of time?
2   A.   I wouldn't look at it as hours.
3   I would look at it as teams, right, dedicated
4   programs.
5   Q.   Time meaning teams; is that what
6   you're saying?
7   A.   Time meaning human resources
8   times. I wouldn't look at it as 100 hours
9   versus 200 hours. I would look at it as teams.
10   In my professional experience, in
11 my strategic consulting to my clients, it's not
12 about time. It's about do you have teams of
13 people working on these problems?
14   Q.   Okay. How many teams does Google
15 have dedicated to the development of standards,
16 tools in order to bolster the security of the
17 advertising ecosystem?
18   A.   As I sit here right now, I can't
19 answer that question.
20   Q.   Why not?
21   A.   I mean, it's a very complicated
22 question, and Google is an organization -- a
23 sophisticated organization, so it would take
24 sitting down and walking through each team.
25   But I can tell you from what I

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1 saw and what I learned about their commitment in
2 the space, I would quantify it as substantial.
3 I mean, they developed ads.txt. They outed 3ve.
4 I mean, those are two massive operation. That's
5 the entire industry -- I think the number I
6 quoted was $29 million was hemorrhaging. I
7 mean, those are two really great examples.
8   Q.   They didn't do those by
9 themselves, right?
10   A.   They found it. They partnered.
11 Google and White Ops partnered together and
12 raised their hand.
13   Q.   That's for 3ve. There was a
14 whole working group outside of Google that also
15 helped in the development of ads.txt, right?
16   A.   But Google led the charge on it.
17   Q.   But the answer to my question is
18 yes, there are many other groups that led to the
19 development of ads.txt, right?
20   A.   But that's exactly what I'm
21 talking about; you are making my point exactly.
22 Google is at the forefront. They are the
23 leaders in this space and they are saying, hey,
24 everybody, come with us, let's knowledge share,
25 let's share information, let's work together. I

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1 mean, it is the exact concept the U.S.
2 government wants, right, and it is the exact
3 concept that I think the industry wants.
4   The industry is not going to
5 adopt technologies that one person in a vacuum
6 develops. They want to coalesce around an idea
7 and crowdserve it and make it the very best it
8 can through knowledge sharing, and that's
9 exactly what Google is doing. And they did it
10 so well that ads.txt was widely adopted almost
11 immediately and endorsed by the IAB.
12   Q.   Does Amazon have -- how many
13 teams does Amazon have dedicated to the
14 development of standard tools in order to
15 bolster the security of the advertising
16 ecosystem?
17   A.   As I sit here right now, I can't
18 answer that question.
19   Q.   What about Criteo?
20   A.   As I --
21   MS. MAUSER: Objection,
22   foundation.
23 BY MR. FREEMAN:
24   Q.   You can answer.
25   A.   As I sit here right now, I can't

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1 answer that question.
2   Q.   Does The Trade Desk invest a
3 substantial amount of time in the development of
4 standard tools to bolster the security of the
5 advertising ecosystem?
6   A.   I don't have that information.
7 And as I sit here right now, I can't answer that
8 question.
9   Q.   Did you have access to Google's
10 information about that?
11   A.   I looked at the totality of the
12 information provided to me and what was
13 available in open source.
14   Q.   But you were retained by Google
15 as an expert. Why didn't you ask Google for
16 that information that was not publicly
17 available?
18   A.   Based on what I had, I was able
19 to form an opinion. Again, you're talking to
20 someone who works in this industry every single
21 day and is advice advising clients in big tech
22 on this topic and actually coming to the aid of
23 these clients when they have a crisis to combat
24 these sorts of risks.
25   So when I was retained and

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1 started reading the information provided to me,
2 I could quantify it as an expert in this
3 industry. They're making a substantial
4 investment. That's why I used the term
5 "substantial."
6   Q.   Again, just to be clear you, used
7 the phrase "substantial" without defining any
8 particular metric or measurement, right?
9   A.   The measurement is my
10 professional experience and my day-to-day work
11 that I'm doing every single day compared to
12 other big tech.
13   Q.   Okay. I want to direct your
14 attention to paragraph 41 on page 17.
15   A.   Yes.
16   Q.   You state that Google obtained
17 the, quote, "Trustworthy Accountability Group,"
18 which you refer to as TAG, T-A-G, right?
19   A.   Yes.
20   Q.   "Anti-Fraud Certification and
21 Certificate against Malware" and "TAG's Brand
22 Safety Certification," right?
23   A.   I see that, yes.
24   Q.   Did you look to see if any other
25 participants within the digital advertising

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1 ecosystem had certificates from TAG like Google?
2   A.   I'm sure I did.
3   Q.   Are you aware that The Trade Desk
4 has achieved certified against fraud by TAG?
5   A.   Am I aware of that?
6   Q.   Yeah, are you aware of that?
7   A.   As I sit here right now, I don't
8 recall but, okay.
9   Q.   Are you aware that The Trade Desk
10 is certified against malware by TAG?
11   A.   As I sit here right now, I don't
12 recall.
13   Q.   Are you aware that Criteo also
14 has achieved the brand safety certification by
15 TAG?
16   A.   I think that's great. And, no, I
17 wasn't aware of that.
18   Q.   Are you aware that Criteo has
19 been certified against fraud by TAG?
20   A.   No, as I sit here right now, I
21 was not aware of that.
22   Q.   Are you aware that OpenX has the
23 brand safety certified by TAG?
24   A.   No, as I sit here right now, I
25 wasn't aware of that. But I think these

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1 recall.
2   Q.   Are you aware PubMatic has the
3 brand safety certification by TAG?
4   A.   No. As I sit here right now, I
5 can't recall.
6   Q.   Are you aware of Index Exchange
7 having the brand safety certification by TAG?
8   A.   As I sit here right now, I can't
9 recall.
10   Q.   If that information were to be
11 true about these certifications of these
12 companies, does that change your opinion about
13 the value of Google's certification compared to
14 others in the market?
15   MS. MAUSER: Object to form.
16   THE WITNESS: Can you reask the
17   question? Can you repeat the question?
18   I'm sorry.
19 BY MR. FREEMAN:
20   Q.   If that information were to be
21 true about these certifications of these
22 companies, does that change your opinion about
23 the value of Google's certifications compared to
24 others in the market?
25   MS. MAUSER: Object to form.

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1 certifications are great, and it just speaks to
2 the evolution of the industry as everybody is
3 working together to implement enhanced
4 technologies for the safety and security of the
5 consumers. I really do.
6   Q.   Are you aware that OpenX is
7 certified for transparency by TAG?
8   A.   No, as I sit here right now, I
9 was not aware of that.
10   Q.   Does Google have that
11 certification for transparency by TAG?
12   A.   As I sit here right now, I can't
13 recall.
14   Q.   Are you aware that Amazon
15 advertising has achieved the brand safety
16 certification by TAG?
17   A.   As I sit here right now, I can't
18 recall.
19   Q.   Are you aware that Xandr has the
20 brand safety certification by TAG?
21   A.   No, as I sit here right now, I
22 can't recall.
23   Q.   Are you aware that Magnite has
24 the brand safety certification by TAG?
25   A.   As I sit here right now, I can't

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1   THE WITNESS: As I said earlier,
2   I think it's great that these companies
3   are receiving these certifications. I
4   think it speaks to the evolution of the
5   industry and how working together to
6   identify risk and mitigate that risk is
7   providing benefits to the consumers.
8   And these organizations are being
9   recognized for their work in this space.
10 BY MR. FREEMAN:
11   Q.   You said various iterations of
12 this throughout today, but that Google was a
13 leader in the cyber security within the
14 advertising -- digital advertising ecosystem; is
15 that right?
16   A.   I do believe that Google was an
17 innovator and leader in the space.
18   Q.   Okay. What statistical data did
19 you review that supports the idea that Google
20 was a leader within this space?
21   MS. MAUSER: Object to form.
22   THE WITNESS: I wouldn't say that
23   the evidence would be in the form of
24   statistical data, rather innovative
25   data, rather in the innovation of frame

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1 works. And, you know, the clear example
2 there is the innovation of open bidding
3 and the various features in open
4 bidding. You don't need me to tell you
5 that they're a leader in the space and
6 that they're an innovator. Look at all
7 the other companies that have followed
8 their lead and adopted the same
9 features.
10   Google, again, made that
11 investment in time, money and knowledge
12 and -- and as I walked through those six
13 risks that they were able to mitigate,
14 shortly after them rolling out their
15 technologies or their framework
16 enhancements header bidding, rolled out
17 many of the same features.
18   In the current implementation of
19 header bidding, server side header
20 bidding, it's very similar to Google's
21 open bidding. And as we all know, many
22 providers today have adopted header
23 bidding and tweaked it to their own
24 liking. Amazon TAM is a great example.
25 Prebid, which is open source.

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1   So when you say why do I consider
2   them a leader? Well, one, because they
3   developed these new features and these
4   new protocols in which the industry
5   would operate. But then that's further
6   endorsed by the industry complimenting
7   them by actually adopting the same
8   features and baking them into their
9   framework.
10 BY MR. FREEMAN:
11   Q.   Do you know the relative adoption
12 in the industry of header bidding compared to
13 open bidding?
14   A.   The relative adoption, I don't.
15 I don't. I know that in the header bidding
16 space I know that when it is implemented, it's
17 very common for those organizations to implement
18 with their own proprietary or customized
19 implementation.
20   Q.   What peer-reviewed academic
21 journals did you review that supports the idea
22 that Google is a leader in cyber security in the
23 advertising ecosystem?
24   MS. MAUSER: Object to form.
25   THE WITNESS: I don't need a

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1   peer-reviewed journal to tell me that.
2   As I just walked through having worked
3   in this industry my entire life and
4   having, you know, work in it today,
5   Google, again, made time, money and
6   knowledge investment into a more secure
7   platform for advertising. And the -- as
8   I said earlier, the greatest compliment
9   or indicator that they're viewed as a
10   leader is everyone else in the industry
11   adopted their innovation, their
12   approach, and it is now widely used in
13   server side header bidding.
14 BY MR. FREEMAN:
15   Q.   I understand you said you didn't
16 need one, but what peer-reviewed academic
17 research did you review that supports that idea?
18   A.   I made that opinion based on my
19 professional experiences of working in the
20 security industry my entire life. I didn't need
21 a peer review. I made that opinion based on my
22 experiences.
23   Q.   So the answer to my question is:
24 you did not review or rely on any peer-reviewed
25 academic research to support the idea that

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1 Google was a leader within cyber security of the
2 advertising ecosystem, right?
3   A.   The answer is no, I didn't need
4 one because I am making that -- I am forming
5 that opinion and writing that opinion based on
6 my experience as a security professional for my
7 entire life.
8   Q.   What surveys did you conduct or
9 review that supports the idea that Google is a
10 leader within cyber security in the advertising
11 ecosystem?
12   A.   Again, as I just walked through
13 with you I didn't need to conduct a survey. I
14 see how the industry is adopting the very same
15 features Google developed that they are
16 implementing in header bidding.
17   Q.   So, again, is the answer is you
18 didn't rely on any survey or review any survey
19 that supports the idea that Google is a leader
20 in cyber security in the advertising ecosystem?
21   A.   I mean, you keep asking me about
22 surveys, but I don't understand what I would
23 survey. The data is there, it's in front of us
24 all right now. I mean Google innovated -- led
25 and innovated this more secure approach to

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1 online advertising. They do it, they document
2 it, others read their documentation and take
3 what Google did and implement their same safe
4 and secure version of the features.
5   So while I did not interview or
6 survey, explicitly survey, implicitly, the
7 evidence is there if they -- the evidence is
8 there.
9   Q.   What led the industry to create
10 header bidding in the first place?
11   A.   Waterfall, the waterfall approach
12 was viewed to limit the amount of revenue that
13 could be generated. And so there was a belief
14 that rather than stepping down a
15 performance-based or reputation-based ladder
16 that publishers could make more money if they
17 actually conducted bids. I would also say that
18 the technology evolved a bit and allowed
19 publishers to reveal more information about
20 their users to allow more targeted
21 advertisements.
22   Q.   What interviews of Google
23 employees or former employees did you conduct or
24 review that supports the idea that Google is a
25 leader in cyber security in the advertising

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1 ecosystem?
2   MS. MAUSER: Objection, asked and
3   answered.
4   THE WITNESS: Yeah, all due
5   respect, I think I've answered that.
6 BY MR. FREEMAN:
7   Q.   The answer is you are not relying
8 on any interview of a Google employee or former
9 employee?
10   A.   I am relying on my experience as
11 a security professional.
12   Q.   What metric or metrics are you
13 opining that Google is better at than the rest
14 of their competitors in cyber security in the
15 advertising ecosystem?
16   MS. MAUSER: Object to form, no
17   foundation.
18   THE WITNESS: I think that's a
19   bit of a complicated question, so I
20   would ask that we can step through it.
21   When you say they're competitors, you
22   mean they're advertising competitors,
23   we're not talking about big tech or are
24   we?
25 BY MR. FREEMAN:

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1   Q.   Okay. You've made the argument
2 that Google -- or you stated now Google was a
3 leader in cyber security in the advertising
4 ecosystem, right?
5   A.   Correct.
6   Q.   What other groups or companies
7 were they leading in cyber security in the
8 advertising ecosystem?
9   A.   What other groups was Google
10 leading?
11   Q.   You're saying they're a leader.
12 Who are they leading?
13   A.   They're leading the industry.
14   Q.   Who is in the industry? That's
15 my question.
16   A.   I mean, you've rattled off a
17 bunch of names today. I would say for the
18 purposes of our discussion, those folks. I
19 mean, we're talking about a framework here, not
20 an actual company. I mean, that is what I mean.
21 I mean, that is leadership. That is not the
22 development of a business concept. It's the
23 development of a framework, right. That's like
24 saying the inventor of TCPIP, you know, built it
25 for, you know, selfish benefits. He built it

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1 for the furtherance of internet communications.
2 And what I'm saying is what Google did was
3 develop a framework.
4   Open bidding is a framework that
5 they use today, and a framework that others -- a
6 framework, like TCPIP, a framework that others
7 saw, realized the features because of Google's
8 documentation and said we would like to develop
9 our version of that framework which led to the
10 evolution and the more secure version of header
11 bidding which is server side. And what's more
12 is that while Google has their framework and
13 they've tweaked to the likes of the Google
14 organization, header -- those who deploy header
15 bidding have done the same thing.
16   Amazon has got their own
17 proprietary version of header bidding. Open
18 bidding is their own -- I'm sorry -- Prebid has
19 their own free available version and people
20 download that base and tweak it to their liking
21 so I mean that's what I'm talking about with
22 leadership. They developed a framework that is
23 now used throughout the industry.
24   Q.   Is it your testimony that they
25 have developed more products than others in the

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1 industry in cyber security in the advertising
2 ecosystem?
3   A.   My testimony is they've developed
4 a framework, not a product. That's what I'm
5 talking about TCPIP, internet communications is
6 a framework that is now the backbone of the
7 internet, okay, it moves data. What Google did
8 is they took -- they took freely available
9 concepts, right, internet concepts,
10 communication concepts and securitized them and
11 said hey, here is a more safe and secure
12 framework in which the advertising industry can
13 operate on and that framework, they use. They
14 said this is ours, we're going to call it open
15 bidding by the by here are all the features
16 based on our lessons learned, our time, our
17 money and our knowledge investment has taught us
18 this over the years and we're going to document
19 all this and others in the industry, as the
20 industry works, see this and they say amazing,
21 we want to take this and bake these same
22 features into header bidding because we like
23 header bidding and we want to, you know, put our
24 special tweaks on it to make it our version of
25 header bidding like as Amazon has, as other

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1 organizations have.
2   It's similar to how when TCP was
3 created other engineers said is there a way to
4 make faster communication, so they came out with
5 UDP and that is what -- that is why I'm sitting
6 here as a security researcher saying that's
7 leadership.
8   MR. FREEMAN: Want to take a
9   break?
10   THE VIDEOGRAPHER: Off the record
11   at 5:58.
12   (Brief recess.)
13   THE VIDEOGRAPHER: On the record
14   at 6:08.
15   MR. FREEMAN: We have nothing
16   further at this time.
17   THE WITNESS: Thank you.
18   MR. FREEMAN: Okay we can go off
19   the record thank you.
20   THE VIDEOGRAPHER: Off the record
21   6:08 p.m. This ends today's testimony.
22   (Witness excused.)
23   – – –
24
25

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1   C E R T I F I C A T I O N
2   I, MARGARET M. REIHL, a
3 Registered Professional Reporter,
4 Certified Realtime Reporter, Certified
5 Court Reporter, Certified LiveNote
6 Reporter, do hereby certify that the
7 foregoing is a true and accurate
8 transcript of the testimony as taken
9 stenographically by and before me at the
10 time, place, and on the date
11 hereinbefore set forth.
12   I DO FURTHER CERTIFY that I
13 am neither a relative nor employee nor
14 attorney nor counsel of any of the
15 parties to this action, and that I am
16 neither a relative nor employee of such
17 attorney or counsel, and that I am not
18 financially interested in the action.
19
20 *Margaret Reihl*
21 ---
    Margaret M. Reihl, RPR, CRR, CLR
22 CCR License #XI01497
    NCRA License #047425
23
24
25

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1   ACKNOWLEDGMENT OF DEPONENT
2   I, ANTHONY J. FERRANTE, do hereby
3 certify that I have read the foregoing
4 pages and that the same is a correct
5 transcription of the answers given by me
6 to the questions therein propounded,
7 except for the corrections or changes in
8 form or substance, if any, noted in the
9 attached Errata Sheet.
10
11
12 _____
    ANTHONY J. FERRANTE   DATE
13
14
15
16
17
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25

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